

HOW TO MAKE A VEGETABLE GARDEN



515321
794

The D. H. Hill Library



North Carolina State College

5B321

F94

N.C. STATE UNIVERSITY D.H. HILL LIBRARY



S00313944 O

DEPARTMENT OF COMMERCE

فتح المار

10 Oct '51 L

16 Oct '51 A

1882

FEB 1941

MAR 16 1977

SEP 21 1988

8498



The fence bordering this vegetable garden is at once a wind-break and a thing of beauty in June

How to Make a Vegetable Garden

A Practical and Suggestive Manual for the
Home Garden

By
EDITH LORING FULLERTON

Illustrated by
H. B. FULLERTON



NEW YORK
DOUBLEDAY, PAGE & COMPANY
1905

Copyright, 1905, by
Doubleday, Page & Company
Published April, 1905

*All rights reserved, including that of
translation—also right of translation
into the Scandinavian languages*

DEDICATED TO
The Man from Out West
IN LOVING MEMORY OF THE MANY HAPPY HOURS
SPENT TOGETHER IN OUR GARDENS

8498

PROPERTY OF
A. E. COLE

PROPERTY OF
A. E. COLE

PROLOGUE



WHILE sitting in front of our dear old fireplace at dusk one autumn day, with our two girls at my knee, they begged for a story. I told them how the great apple log glowing and crackling before us had once been a small tree, and how it had grown taller each year until its head was higher than the house and its branches were laden with fruit. But it grew too old at last to bear well, so it had to be cut down to make room for younger trees. Its work was not done, however. Just now it is giving us warmth and making the room glow with light. Then its white ashes will be spread about the rose bushes—and next year they will have become part of a beautiful blossom. A look of wonder at the revelation of Nature's perpetuation came into the deep-blue eyes.

Longfellow says, "There is no death; what seems so is transition," and to me this giving, taking and returning by Nature is one of the grandest things in the world. He who is near to Nature's heart, is very near his Creator.

It is the love of all that is outdoors, and Dame Experience's sharp but unforgettable lessons, together with the many things we have learned from books and friends, that have made it possible for us to write this volume. May it make warm friends and help others to enjoy their garden more than ever before. It has been our earnest effort to tell the simple, necessary things, leaving the deep and scientific parts to those who make such things their life-study. I trust, however, that we have left out no links in the chain of the plants' life-history.

EDITH LORING FULLERTON.

CONTENTS

PROLOGUE

THE APPLE TREE'S STORY. NATURE'S PLAN OF PERPETUATION

CHAPTER I

WHILE NATURE SLEEPS AND THE FIRELIGHT GLOWS

While Nature sleeps—The beginning of a garden—Preparation of the soil—Fertilisers absolutely necessary—Manure and its protection—Fall digging—Spreading manure—Broadcasting chemical fertilisers—Spring forking 3

CHAPTER II

GARDEN ARCHITECTURE

Sketching plans around the fireside—Selecting a site—Direction of rows—Placing various varieties, selecting positions—Temporary windbreaks—Sketch I., showing angle of sun's rays in regard to planting relation to rows—Drawing power of the sun, warping—Sketch II., showing garden without western sun—Sketch III., small suburban home plot—Sketch IV., detail plan of the garden—Deterioration of soil—Sowing to legumes—Innoculating the soil—Compost heaps—Topping trees to secure additional sunlight—Enclosing or isolating gardens—Sketch V., Japanese or radial garden—Vegetable flower beds 23

CHAPTER III

SPRING OPENING

The purchase of fertilisers, cost—Heavy and light soils—Tools: wheel-hoes, etc.—Breaking up the soil by manual labour—Small tools

and their cost—Straight rows and how to make them—How to use tools, and the reasons why—Coldframes, hotbeds, seed-boxes—Hotbed mats, boughten and home-made	31
---	----

CHAPTER IV

SMALL BEGINNINGS

Good seed a necessity—Where to buy, suggestions for securing them—Saving seed—Classes of seed—Sowing time—Early crops—Method of germination—Transplanting methods—Protection afterward—Depth to sow seed—Making drills—Planting seeds of rapid germination with seeds of slow germination—Reasons for this combination planting	45
---	----

CHAPTER V

STAY-AT-HOMES AND PEREGRINATORS

Transplanting—Thinning—Use of tin cans, paper pots, berry baskets, eggshells, flower pots, roofing felt, plant lifter, sod, partition boxes, charlotte-russe cases	59
--	----

CHAPTER VI

THE SURVIVAL OF THE FITTEST

Classes of enemies—Flea-beetle—Potato-bug—Cutworm—Squash-bug—Striped beetle—Mixing Paris green and London purple—Protection by tent and other means—Cabbage-worms and aphids—Pyrethrum and salt—Tobacco liquid—Kerosene emulsion—Chinch-bug and tassel-worm—Celery caterpillar—Squash vine borer—Carbon bisulphide—May beetles—Moles—Trapping moths at night—Smut—Rust—Bordeaux—Sprayers—Scab—Blight—Treating potato seed for scab	71
--	----

CHAPTER VII

UPLIFTING DEVICES

Supports for lima beans, peas and tomatoes—Old-fashioned means—Modern methods—Artistic ways—Kinds of wood—Kinds of wire	
---	--

—Height of supports—Trimming vines—Stake training—Brush rows—Slanting screen—Fan supports—Folding lattices—Wire supports.	87
---	----

CHAPTER VIII

MIDSUMMER

Desire for rest on part of plants—Vegetables in the garden in August— Cultivation for the various varieties at this season—Lettuce screens—Manure-water—Making and keeping—Irrigation by hose, water-can and pipe system—Use of a ram—Chlorophyl eliminators or blanching—Flower-pots—Tying—Sacking— Boarding—Matting—Storing—Banking	97
--	----

CHAPTER IX

OCTOBER DAYS

Pulling up debris—Burning and composting—Asparagus, care at this season—Rhubarb, care at this season—Storing screens, poles and vine supports—Protecting celery—Digging carrots and parsley—Protecting kale, cardoon, dandelions—Cutting cauli- flower and broccoli—Protecting corn salad—Taking up endive and chicory—Digging up the garden—Spreading manure—Late potatoes—Storing roots and winter greens in pits and root cellars	III
---	-----

CHAPTER X

OLD FRIENDS AND NEW ACQUAINTANCES

Garden ruts—At least one new variety each year—Personal experiences with new friends—New theories in regard to medicinal properties —Odd vegetables and foreigners—Number of varieties in each species—Chemical composition of vegetables and their value to the human system	123
---	-----

CHAPTER XI

LEAVES WE EAT

Methods of planting, raising, cutting, storing ; also suggestions for serving lettuce, chicory, cress, fennel, rampion, roquette, cardoon, dandelion, celery, cabbage, mustard, endive, corn salad, pe-tsai, rhubarb, borage, asparagus, parsley, chervil, garnish kale, kales, beets, collards, spinach, Brussels sprouts, orach, leeks, kohlrabi, herbs 143

CHAPTER XII

ROOTS WE EAT

Methods of planting, cultivating, harvesting, storing and preparing for the table radish, beet, carrot, parsnip, salsify, scorzonera, scolymus, turnip-rooted parsley, turnip-rooted chervil, celeriac, Jerusalem artichoke, onion, potato, turnip and rutabaga, garlic, horseradish 221

CHAPTER XIII

SEED AND SEED PODS WE EAT

Methods of planting, cultivating, harvesting, storing, canning, preserving and cooking tomatoes, melons, cucumbers, peas, beans, peanuts, squash, pumpkin, eggplant, pepper, martynia, okra, corn, strawberries, currants, gooseberries, blackberries, raspberries and blackcaps, wineberries, ground cherries 259

CHAPTER XIV

PLANTING TABLE FOR VEGETABLES

A condensed guide, showing when and how to plant seventy-four kinds of vegetables, how to cultivate them, and when they are ready to eat—adapted to the small home garden 327

LIST OF ILLUSTRATIONS

The fence bordering this vegetable garden is at once a wind-break and a thing of beauty in June	<i>Frontispiece</i>
	PAGE
While nature sleeps	3
Forking in the fall	4
A manure pit, the doors open	5
Manure pit, showing two doors. Through one, the manure is thrown in; through the other it is removed	6
Spreading manure in the fall	7
Requisites of success	8
Where to plan the garden	9
Fig. 8. Plan to show how to run the rows	11
Fig. 9. Plan for combination vegetable and flower garden	11
Fig. 10. Plan for combination vegetable and flower garden	12
Fig. 11. Plan for combination vegetable and flower garden	12
Fig. 12. Two crops on the same ground	13
Fig. 13. A vegetable garden arranged for beauty	14
"Please may I have some wood-ashes for my violets?"	15
The woodpile by the kitchen door	16
The woodpile's ashes turned themselves to roses	17
Without some fruits, the garden is incomplete	18
Plan for small fruits	19
Making the garden plan	23
The faint awakening of the earliest spring	23
A compost heap is better than a gold mine	25
Vegetables screened by flowers—a combination garden	26
You take your seed	27
If anyone thinks vegetables are not pretty, he is mistaken	27
Signs of spring	31
A Planet, Jr., wheel-hoe and attachments	35
Plan showing rows of corn planted with, and without, a garden line	36
A dibble	38
Carefully protect transplanted plants	39
A seedbox made from an old gelatine box and two glass plates held in place by tacks	39
Coldframe improvised from materials at hand	40
Hose and watering-can prime requisites in gardening	41

	PAGE
The stick-marker, ready for work	42
Small beginnings	45
From a tiny seed grows a stem two-and-a-half inches through and fifteen feet high, bearing a head that weighs four-and-a-half pounds	46
Gorgeous blossoms from little hard, round pellets	46
A sunflower towering fifteen feet above the earth	47
Good and inferior seed from the same packet: Corn, beans, squash, sea kale, and martynia	49
Sifted seeds	50
Our neighbours were glad to give us pointers	52
Parsley seed asoak before planting	53
Making a deep furrow with the hoe	54
Your hoe-handle will make a good furrow	54
Sowing seed in a furrow made with a presser	55
Types of Stay-at-homes and Peregrinators	59
Tin can, the bottom and seam of which have been unsoldered, the seedling in it ready to be slipped off into the hole	64
Paper pots	65
Strawberry runner caught down with hairpin; soil loosened from pot with knife	65
Seedling in a paper pot	65
Seedling about to be transplanted from a paper pot; no shock to the root system	66
A bottle carrier utilised as a compartment seedbox	67
Berry box and charlotte-russe case—each a good nursery for seedlings	67
Seedling topped before setting in the garden	68
Corn-smut decoration	71
Cabbage-worm embroidery	71
Tobacco for certain sucking insects is powdered and blown on stems or steeped and sprayed	72
Bordeaux mixture, the standard fungicide. Invaluable for the home garden	72
Kerosene emulsion, effective with plant lice and other sucking insects	73
Luring night-flying moths to destruction. One such is mother to the cut-worm	73
Vile smelling whale-oil soap, bad for scale insects and good for currants and gooseberries	74
Paris green for insects that chew, used as a powder or a spray	75
Crawlers will seek the shade of an inviting shingle. "Reconcentrado" the worms	76
Cut-worms will hide under chips and stones near the plants and can be killed in the early morning	76
The knapsack sprayer in action	70
Various types of spraying apparatus	78

Fresh hellebore	81
Vine uplifters	87
Fig. 1. A "wigwam"	88
Fig. 2. An American pergola	88
Raffia	89
It is handy and persuasive	89
Planting peas along a hedge	90
Fig. 5. A support for tomatoes	91
Fig. 6. A support for tomatoes	92
Fig. 7. A support for tomatoes	92
Scissors support or slab trellis	93
A lean-to rest for tomatoes	94
Midsummer	97
A spray of late green stringless beans	98
Garden in midsummer	99
Two methods of preparing manure water	101
A cheese-cloth screen for lettuce	102
Bringing in the vegetable marrow squashes	102
Pinching back lima-bean vines to throw the strength into the bean	103
Potatoes must be dug and dried in the shade	104
The barrel in which manure water is made	104
A swift-running, merrily ringing brook	105
Our irrigation scheme	106
At the falls a hydraulic ram will be placed	107
Autumn chores	111
Hay-lined earth-pit almost finished	113
Celery-pit opened to take out a fresh supply	113
In the garden, there is still much that is green	116
The garden and its vegetable pits lie deep under the snow	117
A peep into the root cellar	119
Old friends and new acquaintances	123
The Sakurajima radish	124
The Pe-tsai, a newcomer from Mikadoland	125
Borage, one of our flower vegetables	127
Tall white Cimitar corn	129
Golden Bantam corn	129
Trianon lettuce	130
Black-seeded Simpson lettuce	131
The exquisite leaves of the striped and variegated kale	132
Chervil, a dainty new garnish	133
The fine foliage of the fennel	134
The American flag leek	135
New Zealand spinach	136

	PAGE
Old friends one cannot lose	137
The heart of a big cardoon	139
Swiss chard	140
As varied in form as in flavour	143
Leaves of the cabbage lettuce	144
Trianon lettuce in blossom	146
Express Cos lettuce at the eating stage	147
Seedling of Express Cos lettuce	147
Giant Iceberg lettuce	148
The large end of the midrib should always be broken from the lettuce before serving	149
Water cress	150
Seedlings of the water cress	150
Extra curled cress	151
American cress ready to cut	151
Blossom of the extra cut (white) cress	152
Seedling of the green curled endive	153
French moss curled endive blanched	154
Broad-leaf Batavia endive	155
The seed bed along the arbour	156
Taking up endive	157
Lettuce-leaf corn-salad seedling	159
Witloof chicory	160
Blossom of the Witloof chicory	160
Celery seedling	162
The heart of the stalk	163
A celery trench lined with salt hay	164
When earth gets into the crown in banking	165
Opening a trench of earthed-up celery	166
Putting celery in boxes for storage in the root cellar	167
Cooper cutting for soup, celeriac and table celery (Winter Queen)	169
Spanish cardoon	173
The cardoon in its Japanese kimono	174
What not to let the rhubarb do	175
Bunching Connover's Colossal asparagus	179
Asparagus leaves, partly cut off and burned to destroy the little gray bug that feeds on them	182
A cabbage making believe it is a Brussels sprout	186
Seedling of the Georgia collard	188
Brussels sprouts	189
The Staghorn fern kale	190
Sea kale in the fall of its first year	191
Snow covered kales	192

	PAGE
White orach seedling	193
The dandelion's gorgeous blossoms	194
Arlington dandelion	195
French dandelion seedling	195
The dracena-leaved beet	198
Like a mangelwurzels	199
Prickly spinach	200
A spike of prickly spinach	201
Ordinary winter spinach	202
Borage ready for cutting	203
Against chervil and ornamental kale, ordinary parsley must look to its laurels	204
Carentan leek	206
Chives	206
Our sage bush after yielding three families a year's supply	208
A spray of sage hung up to dry	208
Spearmint cut for sauce	209
Roadside dog fennel	210
Yellow fennel blossom	210
The banned roquette	212
Cauliflower cut through centre	213
Cauliflower tied up to protect the head from sunburn	214
Broccoli, a handsome hardy cauliflower	215
The globe artichoke	216
The thistle-like blossom of the globe artichoke	217
Roots we eat	221
Radishes	222
Blossom of the Sakurajima Mammoth radish	223
Rampion	226
Sixteen inches of parsnip	229
The same parsnip after five days of air	229
The parsnip's blossom	231
Early round parsnips	231
The true Danvers long carrot	232
Early carrots	233
Young carrots	233
Salsify or oyster plant	234
Scorzonera seedling	234
Artistic arrangement of the scorzonera blossom	235
Scorzonera root and leaf	235
Scolymus leaves and root	236
Scolymus blossom	236
White turnip	238

	PAGE
Swedish turnip	238
Two roots of the turnip-rooted parsley	240
Seedling of turnip-rooted parsley	240
Erfurt Giant celeriac seedling	241
The potato is a tuber—quite distinct from roots	242
The beautiful blossom of the much-maligned potato	243
Jerusalem artichoke	250
Red onions	250
A dainty long-rooted onion seedling	251
A shallot	252
Shallot ready to eat	253
American garlic	254
A quaint putting up of garlic	255
Horseradish roots	256
Who first dared to taste them?	259
Seed pods we eat	261
The red tomato	263
The yellow egg-shaped tomato	264
A green tomato stuffed with cabbage and tied ready for the pickle-jar	267
Sugar peas	270
Seedling of the sugar pea	272
Lentils	274
Stringless green beans	274
Lima beans	276
A good stand of Egyptian corn	277
Egyptian corn seedling	279
Shoe-peg corn	280
Evergreen corn	281
Popcorn, white and yellow	283
Smut on corn	283
Cool and refreshing cucumber	285
The branching habit of the martynia and the orchid-like blossoms	286
Martynia proboscidea	287
Nature's arrangement of seed	288
Martynia craniolaria	288
The okra seed	289
A poor okra seedling	289
The okra flower	290
Vegetable marrow squash	291
A group of squashes and pumpkins	293
A vegetable marrow seedling	294
Pumpkin, sometimes called cow-pumpkin	294
Patty pan squash	295

LIST OF ILLUSTRATIONS—*Continued*

xix

PAGE

The Netted Gem melon	297
The citron melon	297
Fun in the melon barrel	299
Chinese eggplant	302
White eggplant	302
Fruit of Chinese eggplant	303
Peppers, green and red	304
A puffball mushroom	307
An edible fungus	308
Strawberries as they should be served coming from your own garden	312
Mosquito netting protects strawberries from birds	313
Blackcaps or black raspberries	317
A neat way of training climbing berries	318
The top of a blackberry vine shorn of its beauty by blight	319
Currant blossoms	322
My improvised jelly-strainer	323
By shifting the weight the juice is made to run through a different part of the bag	324

WHILE NATURE SLEEPS AND THE FIRELIGHT GLOWS



While Nature sleeps

HOW TO MAKE A VEGETABLE GARDEN

CHAPTER I

WHILE NATURE SLEEPS AND THE FIRELIGHT GLOWS



IN my estimation there is an endless variety of places for the beginning of a garden. Primarily, of course, the start is in the brain, and from that wellspring of schemes come forth the theoretical lay-out and specifications. These may be on severely practical lines, upon curves of beauty, or on a combination of the two; but they certainly depend upon individual taste, and very largely also upon that warper of ideas and inflexible ruler of all mankind called Circumstances.

Most emphatically, the purely prosaic and eminently practical part of the garden should be started in the fall, with a simple, preliminary preparation of the soil. There are sundry good and sufficient reasons for this, perhaps the most important being the fact that autumn is not nearly so strenuous as spring work, and one who is a healthily vigorous dweller in the country is not forced at the former season to do a myriad things within an extremely limited period, with the usual result of failing to do anything thoroughly well. The garden may begin in the spring with the earliest vegetables, or it may begin in the mind with the vegetables for which there is the greatest affection.



Forking in the fall

There are some people whose ideal vegetable garden is based upon and bounded by corn, peas and beans; others would substitute beets for one of the above; while a number would enlarge the boundaries to embrace lettuce, tomatoes and radishes. Beyond these, few amateurs dare to venture, perhaps because the stock of the family grocer is thus limited.

Preparing the soil sounds like a dull, uninteresting subject, and some of the technical details are undoubtedly more awe-inspiring than interesting. Personally, I don't care to know, for instance, just how much phosphoric acid, potash, nitrogen, lime, humus, and moisture the soil should possess; and I doubt if the

average amateur desires to garden on strictly theoretical lines or to lay foundations of mathematical exactness. Of one thing I am positive: these high-sounding, scientific names and formulæ are enough to scare a number of people so badly that they will never muster sufficient courage to start a garden. At least, they will not venture to prepare the soil properly; and dismal failure ensues without a doubt.

Everyone who cares for outdoor life in general, plant life in particular, knows that each variety of plants, in order to thrive, takes certain substances from the soil, and that to produce the same variety year after year on the same land we must give back to the soil everything that has been taken from it by the growing plant. This subject is exhaustless in detail, but these may be left to the experts and experimentalists who love to theorise. A few growth promoters are known to be good, and to contain a great proportion of the foods required by all species of plants. First and foremost among them is the barn-yard manure. In spite of possible adverse criticism I reiterate: barn-yard manure; but it must have been well cared for and protected, under cover, if possible. Stuff that is full of shavings or sawdust is much worse than nothing as plant food, and a great worm-producer. Mate-

rial from a stable where the animals have been fed weedy hay is a great promoter of weeds in the garden. If the manure has been exposed to heavy rains, all the ammonia and other readily soluble substances that are specially valuable, because quickly available, have leached away, and the ground under the pile has become so rich that it can be utilised only for the raising of a Cinderella-coach-sized pumpkin.

If you have a stable of your own, and have not a manure pit, you are deliberately wasting money, besides spoiling valuable material. Make a pit; be sure to have it deep and broad, with cemented sides and bottom, and, above all things, covered. The easiest and least expensive way, unless one has a simple roofed-over pile, is to dig a pit the desired dimensions, put cement on the earth sides and on the bottom, and allow it to harden thoroughly before anything is put into it. A little salt in the cement at the time it is mixed will accelerate the hardening process. Next place over the pit a roof that will shed water, with a simple lid, or hinged cover, which can be partly



A manure pit, the doors open



Manure pit, showing two doors. Through one, the manure is thrown in; through the other it is removed

opened, so that the manure can be quickly and easily taken out as desired.

This is really an Americanised English pit. They use stone for the sides in England which makes it more expensive but also more durable. There are various other ways of storing and protecting manure, such as an earth pit under the barn, and plans suggest themselves to an individual that are exactly suited to his particular place and needs. Upon one point all agriculturists agree: protected manure is worth very much more than that which has been exposed to the weather. Just what happens to the nitrogen, phosphoric acid, and alkalis under various conditions is not particularly interesting, and experimental or scientific books give full details of the entire matter from both the physical and the chemical standpoints. These lessons are learned not through reading alone but by the exercise of common sense, and by practical experience, backed up by a goodly amount of painstaking patience and a never-failing love of plant life.

As a fertiliser, use ground bone or bone-meal, the latter being the finer and more quickly available, and if wood-ashes are combined with the manure, the garden will thrive and fully repay for all time and labour expended.

We put the manure on our garden late in the fall, after the ground has

been thoroughly dug, and allow it to stay on all winter. This should be done before the ground is frozen, in order that the fertile attributes may be retained on your own premises rather than dissipated upon the highway or carried to the neighbours. Some people protest against fall fertilisation, saying that all the plant nutriment is absorbed so deeply into the earth that the roots are unable to find it in the spring. They probably think it has gone clear through to China, where it is making the rice grow. I can affirm that it has gone into the soil just as far as the fall rains can carry it, and no farther. It does not escape after Jack Frost has been at work for a short time.

The spring rains dissolve and carry in more valuable material, storing food in the earth as well as moisture. As soon as the ground can be worked, that is, as soon as the frost is out and it is dried a little, the fall dressing is turned under by the plow, if the garden is large enough, or forked in in a small one like ours, so full of berry vines and young fruit trees that it would not be wise to put a horse into it. The straw in the manure, and there should be a quantity of it, makes fine *humus*, or vegetable matter that will loosen the soil and hold moisture. If all the leaves that were raked up in the fall are put into the manure, they will serve the same purpose as straw. If they have been burned and the ashes saved, or if there is a compost heap, these go well with sod and waste vegetati

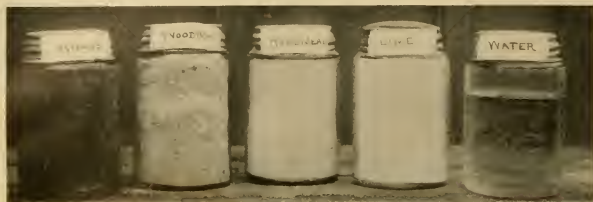
In the spring, before the manure has been turned under, spread on bone-meal and wood-ashes, and, once in three or four years, a little air slacked lime if the soil is sour. Make a mixture composed of two shovels of bone-meal to one of wood-ashes, and cover the ground until it is white. When this is turned in with the manure the plants have food in the place where they need it, namely, so deep that it draws the roots down below the drought line. Many people prefer not to broadcast the fertiliser, but to place it in the rows, hills, or drills and after throwing some earth upon it to sow the seeds directly over the plant food—and this plan has its advantages.



Spreading manure in the fall

HOW TO PLAN THE VEGETABLE GARDEN

THE way to have more and better vegetables for less work is to plan the garden in February, instead of waiting until May. Every one who fails to draw a diagram of his garden is likely to be swamped by the spring rush. Without a plan you are sure to plant too much of one thing and not enough



Requisites of success

of another. The only possible objection to planning the garden in winter is that it may "seem like work." The obvious reply is "Don't make work of it. Enjoy it." If you have never tasted the joys of planning, begin now.

HOW TO RUN THE ROWS

LET us consider first a medium-sized garden with a southern exposure and protection from the north winds. This, of course, will be the earliest garden, for it gets all the sunlight there is. (See Fig. 8.) If the rows run east and west, the rays of the sun strike only the southern side of the row. If, however, they run north and south, the sun's rays strike the eastern side of the row in the morning and the western side in the afternoon. The latter method seems to me to produce a more even and vigorous growth. Again, suppose the rows are planted east and west, the southern sun of summer will continuously draw the rows one way, southward only, thus pulling them out of plumb. This is another point in favor of north and south planting, for rows thus planted are drawn eastward by the morning sun, and this lean is corrected by the afternoon sun.

If the garden faces north, and by this I mean is unprotected from the north winds, would it not be possible to protect it on the northern and western



Where to plan the garden

sides by a hedge of privet, a vine-covered trellis or a grape arbour? The latter in this case would give the greatest amount of protection if made in the old-fashioned lattice style. Even a high board fence can be made a thing of beauty by covering it with vines, particularly climbing roses.

If your garden faces northeast and is entirely cut off from the western sun (Fig. 9), it will be better to run the rows northwest and southeast in order to get the greatest duration of sunlight, for in this situation every available ray is most valuable.

No matter how your garden may face, no matter what angles, curves or dimensions it may possess, you will see at once, and very clearly, the best thing to be done when you have it before you on paper with the area reached by the sun's rays laid out upon it.

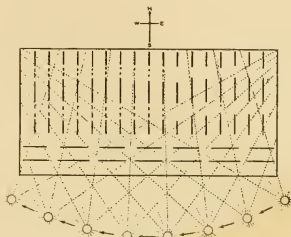


Fig. 8

A COMBINATION VEGETABLE AND FLOWER GARDEN

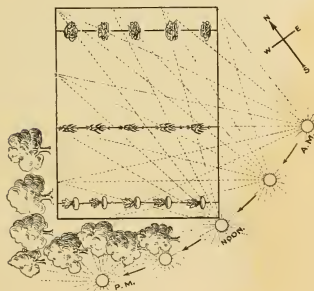


Fig. 9

SUPPOSE you live in the suburbs upon a lot not more than 50 x 100 feet, or even less. You can surely spare a little ground for a vegetable garden. I know of one such dear little home plot and this is how it was laid out. (Fig. 10.) It is a corner lot. On the west and south run the streets of a suburban village with broad curbs and stone sidewalks. It is a fenceless town, hence it was easy to coax a lawn right down to the walk. A few evergreens were dumped in a procession at the

southwest corner, an unhappy dogwood (naturally a shade-loving tree) was trying to live on the sunny west side, while fruit trees were

located on the almost sunless eastern side of the house. It was undoubtedly a creation of some landscape gardener who had to a certainty missed his calling, but he

accidentally did one thing very wisely and we forgave him. As he had exhausted all available space except the back fence line, and had a number of small arbor-vitæ plants, he placed them along the north boundary, and they "did the rest," soon forming a beautiful, close, and therefore effective wind-break, which was of great service to the garden.

A detailed plan of this garden is shown in Fig. 11. The first back bed at the eastern end was sown with lettuce and radishes, half-and-half, in the second bed beets, the third beans, the fourth tomatoes, the

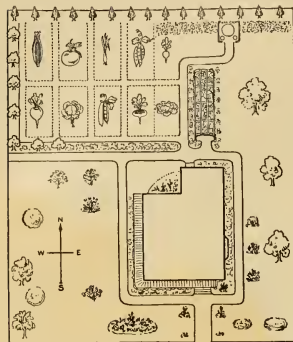


Fig. 10

fifth corn. The front beds were full of flowers which screened the low-growing vegetables, while the taller ones made a fine background for the gay colours. These were the flowers used, all of them showy kinds, suitable for cutting: the first bed at the eastern end phlox, the second nicotiana, the third nasturtiums climbing over a small fir tree, the fourth scabiosa and the fifth verbenas. The western boundary of the garden was an althea hedge against a wire fence. The fence was covered with scarlet runners, making a gorgeous bit against the street. At the front of all these beds was a strip of moss and curled parsley, backed by dainty Shirley poppies, the whole arrangement making one of the most beautiful combinations imaginable.

There were enough vegetables of the kinds planted (except corn, and



Fig. 11

in my estimation it takes a large plot indeed to raise enough corn) to satisfy a family of three.

TWO CROPS ON THE SAME GROUND

IF you are wise you will plant late corn after the lettuce and radishes are out, and more lettuce, corn salad or endive after the beans are out. Then if you care to raise late crops, cabbage, cauliflower or spinach could go in where the early corn grew, and in this manner make the small patch earn its living and pay big dividends.

Here is a plan for successional planting. (Fig. 12.) We will consider

annuals only, the idea being to have the land in use all season. The first sowing of each row may be as follows: Row 1 is to have radishes and lettuce, either one-half or one-third of the row radishes, as you choose; row 2, beets; row 3, green beans and peas; row 4, early corn; row 5, tomatoes; row 6, parsnips and carrots. When the radishes and lettuce are out of row 1, it may be sown to middle-season corn.

When the early beets are out of

row 2 (or perhaps you have sown one-half this row early and one-half late beets), it may receive eggplant or cauliflower. Row 3 may have summer lettuce or kale; row 4, lima beans; row 5 may have cabbage planted between the tomatoes, as the latter will be out in time to allow the former a chance to head. Carrots do not come out until late and parsnips must be frozen to be at their best.

It is well to remember one thing in making this layout, do not let two vegetables of the same botanical family follow each other; for instance, lima beans should not follow green beans or peas, as these are all of one family and draw about the same elements from the soil. All members of the cabbage family are likely to have the same insects and diseases.

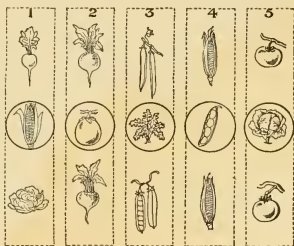


Fig. 12

A VEGETABLE GARDEN ARRANGED FOR BEAUTY

THERE is another suggestion in regard to planting I should like to make, and that is a Japanese or "radial" garden. Take the centre of your garden,

if it be of the proper proportions and not too large, and run the rows from this central point. This will give a vast number of opportunities for combining colour effects, always considering relative heights and methods of growth. (Fig. 13.) The long rays must be spaced as close together to the central ring as the several vegetables will allow. I should think two feet would be a good average. If the rays are long, a wide divergence at their outer ends will result; short rows could be planted in between for a part of the distance.

The centre of the circle should be occupied by either a perennial or a plant that lasts late in the fall. Cardoon, that beautiful, silvery, cut-leaved plant, would be very handsome; parsnips, rhubarb, kale, would be good.

The centre or orb of this Japanese garden plan offers a capital opportunity for the exercise of ingenuity and individuality. One or more plants of broccoli surrounded by a circle of beets would make a striking effect. The tall, gracefully striped and variegated kales might be encircled by parsley, or a large hill of corn, tall-growing or the dainty variety, hedged in by cabbage. In this case the corn could be replaced by a transplanting of Sakurajima radish.

A lima-bean wigwam of poles, supported at the base by lettuce or pe-tsai (Chinese cabbage), would please many. The combinations are endless, and a high or low centre effect could be obtained to suit one's fancy.



Fig. 13

Ray 1 could have lettuce and radishes (it runs due south); ray 2, peas; rays 3 and 7, corn; ray 4, beets; ray 5, scorzonera; ray 6, beans; ray 8, onions or leeks. The intermediate rows could be planted every other one to celery and the others to parsley, carrots, Sakurajima radish and parsnips. These all last well into the autumn, so that the garden would always look well.

THE FERTILISER PROBLEM

THERE is one thing, however, that must not be forgotten, and that is the fertilisation of the soil after each crop has been taken out and before another one is put in, for you can't

expect to grow good cabbage when the corn has taken sufficient food from the earth to enable it to grow a stalk six feet tall, and mature two to six ears of corn.

If you have had a vegetable garden in the same spot for many years and have given but scant fertiliser in that time, say perhaps nothing



"Please may I have some wood-ashes for my violets?"

but manure, you are wondering why your vegetables do not grow as rapidly and mature as perfectly as formerly. Could you spare that garden for one summer and sow it with cow peas, soy beans or red clover and plow that crop under in the autumn? These three varieties of plants (and there are many more like them) gather great quantities of nitrogen from the air. They have very long roots and some possess little knobs, real nitrogen reservoirs, that store away the nitrogen which the leaves draw from the atmosphere. Nitrogen is the most difficult and expensive substance to obtain in fertiliser form and is greatly sought after. It is used not only to develop quickly such crops as lettuce, but to force for a more prolonged period corn, beans, celery, etc. The readily soluble chemicals, such as nitrate of soda, are, of course, excellent, as they are quickly utilised by the plants; but because of their easy solubility they are soon washed away by rains. Moreover, they require moisture to render them available. The nitrogen storers are utilised to a greater extent each year. Their power is to absorb nitrogen from the



The woodpile by the kitchen door

air and to distribute it throughout the soil through the medium of their roots. When the stalks of these crops are plowed in, the nitrogen that they have gathered will be released as the plants decay, and nitrogen, in its most perfect form for stimulating plant growth, is ready on call.

INOCULATING THE SOIL

As wonders never cease, the scientists have now captured the bacteria that attract or urge the plants to draw the nitrogen from the air through the leaf and stalk into the root system. The bacteria trainer cultivates, tames or grows these small creatures, dries them, gives them to us to inoculate or vaccinate the seed or land, so that these plants will draw more nitrogen into the soil than they normally do, because as in other manufacturing concerns, the supply keeps pace with the demand. The Government gives us "yeast cakes," as they call them, so there is no outgo but a postage stamp's value, and the returns are great indeed.

I tell you what I think I will do. When our garden is run out and has

to be sown with legumes (that's what they call these doctor plants), I will ask my neighbours to let me raise all the peas the entire community needs that year, and I will sow the whole garden to "vaccinated" peas and supply the neighbourhood, then the plants can be plowed under in the autumn. Try this and the following spring sow bone-meal, wood-ashes, and a little lime, if the soil has not had any for three or four years, and the vegetables of that season will say "thank you" so hard you will be able to carry off all the first prizes at the County Fair.

THE ADVANTAGES OF A COMPOST HEAP

SUPPOSE you have a new place, where there never has been a garden. Choose your garden spot carefully, have it plowed up and harrowed, take out all the sod you can, but don't, I beg of you, throw it away, for it is better than a gold mine. Take the sod to some out-of-the-way corner of the place, turn it root-side up and leave it. I can hear you say, "I have no out-of-the-way-place and, it would look so terrible here all summer." Never mind. Wait a bit. We shall fix that in a satisfactory way to a surety. Keep the good work up, by throwing on top the waste leaves of cabbage, lettuce, beets, outside stalks of celery, potato tops, bean and pea vines, and tomato tops cut off. It is easy, with the compost heap near the garden, to throw all this valuable material where it will do the most good, and, while keeping the garden looking neatly, you are adding heavily to your working capital and disposing of rubbish at less expense than in any other way. Throw the autumn leaves on it, also waste from the kitchen, if you have no chickens that will turn it to good account. Turn the heap over in the spring, sow a few morning-glory, nasturtium or wild cucumber seed in and around the pile, and you



The woodpile's ashes turned themselves to roses

will have a thing of beauty and a joy all summer. When the sods are rotted they are the finest kind of fertiliser, for they are the substance of the soil for years and years, and you are returning now the bulk of that which has been taken away as long as those particular sods have been growing.

Why can't you leave them in the garden? Because they will grow if they get the faintest chance, and you will be busier pulling up grass than you care to be that first year, and remember that a good compost heap cannot be overvalued.

SMALL FRUITS

LET us take up small fruits for a moment, for no garden is complete without them. Blackberries, raspberries, gooseberries and wine berries are all "prickery," as the children call them, and should have a place to themselves, for it is very annoying, as well as mildly painful, to gather or to cultivate vegetables in close proximity to the thorns. I think it wise to give them a place all to themselves somewhere else in the grounds, or if territory be limited, to plant them as a border to the vegetable garden. If your garden is enclosed by a fence, this opens up excellent possibilities, for a fence is a



Without some fruits the garden is incomplete

support and training-ground for your blackberries, raspberries and wine berries. Moreover, they should have a fence to keep them in good shape

and within bounds. So if you do not care to use this enclosing medium for peas, beans and tomatoes, by all means train berry vines upon it.

The low-growing, virtually ever-green strawberries with their beautifully formed leaves are in some respects very human. Their children (the runners) are always moving away and making new homes for themselves; also relying on the good mother plant for guidance and support, which she supplies through the leading string. This luscious berry should always have a bed to itself. Give to it as much ground as you can afford to spare to allow the plants to remain there two years. At the end of that time take the runners you have coaxed to take root in small pots buried in the ground close by and start a new bed in an entirely different portion of the garden. They are heavy feeders and the vines do their best and heaviest bearing the second year, although they will yield a fair crop the third.

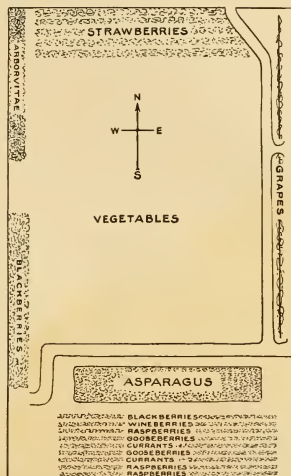
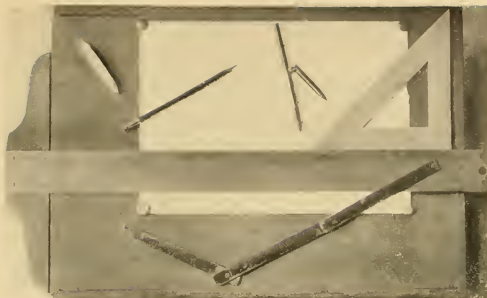


Fig. 14

May I sketch our garden for you, laying out the berries? (Fig. 14.) This is only one of many plants, but it seems to be entirely satisfactory for our situation with its southern exposure.

Remember, that bush berries are fairly high in growth and should not shade the rest of the garden too much, and also keep in mind the fact that strawberries should be sheltered somewhat, if you wish early fruit. Of course, currants should go among the gooseberries, for one could not get along without their piquancy and brilliant colouring, especially if one take pride in one's jellies.

GARDEN ARCHITECTURE



Making the garden plan

CHAPTER II

GARDEN ARCHITECTURE



WITH the first faint indications of nature's awakening in the early spring, when the song sparrow sends a thrill of joy to our hearts with his sweet, insistent note, when the sun's rays gain in power and the days grow slowly longer, then, even though there be snow on the ground, a spirit of unrest pervades our entire being. A peculiar, indescribable feeling steals over each of us, at first in hardly recognised flushes of short duration, but it returns again and again, gaining in strength and vigour until it dominates over every other emotion. It is physical as well as mental. The brain cells expand to new activity; inspiration comes and incites to new efforts, higher and more virile than those which have ruled during the dormant or semi-dormant stages of the winter season. Throughout the body every fibre



The faint awakening of the earliest spring

feels the wonderful and always new impulse, a not-to-be-resisted factor, urging and stimulating to greater deeds. The blood flows swiftly and freely with surges that fill with unspeakable joy the entire being of the nature lover; but it is not to these most favoured of mortals alone that nature's awakening brings renewed love of life. Among the purely mechanical members of the human family the muscles are equally responsive, the daily task, requiring strength of body alone, grows lighter, as shown by unmistakable signs, the brighter eyes, the softer mouth, the whistling of popular airs, the hum or burst of song that recognises in nature a duplication of our own feelings. We wish to aid the lower order of creation. We wish to take a part in the renewal of the life, the awakening from sleep. We want to share in the germination and growth, so we long for the garden. This is the time to pore over catalogues and to make the garden plan.

Do not for a moment think that you can secure too many catalogues. Drop in on all the big, well-known seedsmen, if possible, and, while securing a catalogue, keep your eyes open. There is always something new under the sun, some improvement or development of old favourites; oftentimes some foreigner has been found to thrive in new environment. Changes in method of growing, or in treatment during development, are announced after careful and scientific tests have been made and value practically proven. Appliances and tools which lighten labour, improve the harvest, or achieve both of these objects, may be discovered, in fact are almost invariably found by one in search of and willing to accept the many things evolved, or improved, by ingenious, practical mankind, working all over the world to assist, or improve, Dame Nature's children. If for any reason a voyage of discovery can not be personally conducted, Uncle Sam and a few postal cards will place in your hands mines of information, interest and instruction. Do not stop at the most prominent purveyors of plant life to the public, look through the advertising pages of our many sterling publications, particularly those devoted to outdoor life, such as *Country Life in America*, and you will always find that specialties are made by some growers of the very items of which you so earnestly desire to obtain the fullest information and the finest strain of seed. Get information from as many sources as possible, "read, mark and inwardly digest," while the indoor time is still checking your impulse toward outdoor work. Then make out your orders for seeds, fertilisers and

other aids to complete success, and, stock in hand, await with serenity the planting time to burst—as it always does burst—upon you. It will find you ready and waiting to take advantage of that “psychological moment” which, if missed, will by geometrical progression mean days lost from the date on which the harvest time should arrive.

Let me show you how much time and thought can be saved, and how the garden may take definite form, instead of being a haphazard clumping of vegetables. When the real spring, or working time, actually comes, and there are a thousand and one things to do, if you have not spent your leisure during the dormant indoor season in thoroughly enjoying, anticipating and garnering as we have suggested, you are one of a great army who never seem to learn, or do not remember that each year spring comes suddenly, nearly always with little or no warning. With the rest of the startled ones, you grab a hat, take your seeds, rush into the garden, wonder where to plant this, that or the other thing; wonder how deep they should be planted, the date of planting, if tender or lusty, how far apart, whether they must be planted thick for safety and thinned out afterwards, if they ought to be transplanted or left alone. You find yourself up against a blank wall, and must perforce walk back into the house to hunt up your catalogue.

If you have secured any at all, you generally snatch up the first one you encounter, rush through it, order the usual varieties, although you were not entirely suited in the past year, urge the seedsman to hurry your order, forgetting you are not alone, that “there are others.” Thousands are deluging all the dealers in seeds with “hurry-up” orders, hence the usual result is a repetition of the delay and the consequent loss of days at a time when even moments are valuable, especially for those vegetables that do their best when they get an early start. If, however, you have been wise and laid in your stock of seed, you proceed to locate the catalogues, and by diligent effort to find out how to plant each thing maybe—some few things surely, and by the time you reach the garden again you have forgotten half or more of



A compost heap is better than a gold mine

the things you have read. If you have marked brief instructions on each package of seed you are so much ahead in the game.

The tour of the seed stores in search of catalogues and information has proved a most valuable expenditure of time. The perusal of catalogues and circulars has enabled one to make a selection suited to the particular needs and the conditions controlling each particular garden plot. Seeds have been purchased and instructions noted, therefore rapid progress can be made. If time has not been taken by the forelock, matters assume a very different aspect, everything is in turmoil, all hands are promptly transported to Topsy-turvy Land, the beginning seems a stupendous proposition and the end impossible to foretell. The question now is where shall be planted each

separate variety? does this one need much sun or little? shall the rows run north and south, or east and west? If you put an early crop in here, will it be gone in time to make way for a late crop? If so, is this a good place for that late crop, and so on, *ad infinitum*, until the best part of your time is gone, your head is in a whirl and you are not absolutely sure about anything.



Vegetables screened by flowers—a combination garden

Get your garden dimensions and the compass points of the garden plot. Then go into the house, secure a piece of common brown wrapping paper, a lead pencil and a foot-rule, sit down to your desk or table and make a rough sketch, by lines or dots, laying out the garden on paper. You will be surprised to see how it develops as you go along, and will readily remark where changes of vital import can be introduced. You will undoubtedly make several working plans before you are finally satisfied. One of the joys of garden planning is that each year evolves new schemes which experience or experiment, or a combination of the two, will make accepted specifications of vastly improved value. Lay aside your finished product, together with the seeds that can be planted safely before the soil has been thoroughly warmed up, and you are ready for that bustling time which comes to us each year in this eccentric climate of ours, when many things must be done and done quickly, in order that not an hour may be lost of the valuable time

which enables one to have early vegetables. Yours should be a garden "made while you wait," or, to be more exact, while others wait and lose.

Suppose you never had a garden, but think you would like to try one; you will of course go over your land very carefully and select a sheltered southern exposure, if such a place be available. If, on the contrary, there is just one spot where you can have a garden, and the exposure is not to your liking, you will make the best of it and be greatly surprised to find how much you can do without an ideal situation. If necessary, an artificial shelter may easily be constructed, and at small cost—a little brush, old floor-matting



You take your seeds



If anyone thinks vegetables are not pretty, he is mistaken

nailed to posts, or a screen of latticework. Any number of other methods will occur to every gardener—all of them purely temporary. The matter of a permanent wind-break will be taken up a little farther on in this chapter.

If anyone thinks vegetables are not pretty, he is very much mistaken. We had some sixty odd kinds in our garden this past summer and a number of them are worthy of a place among our flowers. I don't see why one could not have vegetable flower beds; I certainly shall, every year. I have spoken of the large Spanish cardoon, which grows seven feet in diameter. It could be surrounded with Swiss chard, parsley, scorzonera, celery (provided the earth has been made very rich), and beets, either table, Brazilian or *Dracœna*-leaved. Borage is exquisite with its true-blue blossom, and one could have Sakurajima radish as a border to these, as both bloom about the same time. For another flower effect, take a late-sown borage, surround it with scorzonera, which has a beautiful yellow blossom, and in turn could be encircled by cress, chervil or endive.

The combinations are never ending, and these beds and the radial garden both present as great possibilities for a succession of crops as the regular, straight-row garden. I hope the talks about vegetables, which we are coming to later, will help the reader to plan such gardens, for I shall endeavour to record the time a vegetable is edible, when it blossoms, and the colour of both flower and foliage.



SPRING OPENING



Signs of spring

CHAPTER III

SPRING OPENING



ISN'T bonnets, it's tools and a few other little things! Now that the season for actual work has come, what will you work with, in the tool and fertiliser line?

Both are items of such importance to the gardener, be he amateur or professional, that they merit the most painstaking and serious consideration. Man's inventive faculties have for many generations been contriving implements and tools for the tiller of soil. The primary efforts were directed toward lightening the labour of the man behind the plow. The development of this implement, which is the very corner-stone of agriculture, has proceeded steadily, starting with the forked stick, or crooked limb of a tree, which the agriculturist used for scratching up the soil, and handled unaided by man or beast. Improvements were first made in the form and slant at the scratching point of this antedeluvian plow. A forward extension soon followed, that the scratcher might have assistance. The substitution of an animal for the human power was next made by some clever lover of luxury with a perpetual desire to turn from labour to refreshment and rest. The progress after this diversion had been

made was naturally very rapid. Increase of animal power was followed by heavier, deeper-delving plows, first with larger wooden, and later with heavy metal shares, so that two handles were needed. Except among the simpler, undeveloped nations of our own continent and of Europe, the one-handled plow disappeared. From one animal to several was a quick transition; from animal power to steam with a number of plows was a development brought about by the necessities of America's huge farms, and American ingenuity has provided for them within the present generation. As with the plow, so has it been with the other implements; therefore the choice is wide and every individual taste can be readily suited.

A simple outfit for practical purposes, with economy as a strong factor, needs to include no items save a spade, a hoe, and a rake. This small number may be increased either by garden line and trowel alone, or by all the labour-saving conveniences and luxuries produced by thoughtful manufacturers catering to the earth-worker's slightest desire—and their name is legion nowadays.

Fertilisers have followed, as a matter of course, but the necessity for them arose only after man had, through his crops, extracted much or all of Nature's stored-up plant food. The first, and still one of the most essential, of all fertilising materials is the waste products of animal life. Nature, after extracting from the food such properties as she deems necessary for animal health and strength, discards the remainder and supplies it direct or through the medium of mankind to her wards of a lower order of life—the plants. Besides this animal plant-food, good Mother Earth gives of her bounty freely as long as she is able, and then man steps in with compounds or mixtures containing the lacking elements, but alas! they are not always what they seem nor what they are advertised to be. They are good, bad and indifferent, sometimes through lack of knowledge, sometimes through an utter disregard of business integrity, and at times on account of a demand for cheap material. In fertilisers, as in many other lines, cheapness unfortunately is frequently synonymous with worthlessness. However, one of Uncle Sam's subjects can easily, cheaply and quickly obtain accurate knowledge regarding the reliability, and even the composition, of various grades and brands of fertilisers, by writing to the New York Agricultural Experiment Station at Geneva, N. Y. The United States Agricultural Department has many other agricultural stations, and there are societies established in many portions of the United States, so that there is no occasion either for keen dis-

appointment or for waste of money by the agriculturist, great or small, in this glorious country of ours.

You will remember that bone-meal and wood-ashes must be sown broadcast before the manure is dug under; naturally, then, the first step is to buy these two fertilisers. There are innumerable other fertilisers, "complete" and "special," and you may have a particular favourite, or may have an intimate friend who has had marked success with something, but whatever you buy, see that it is the *real* article from a reputable house, which is not afraid of analysis. How many times we have seen bone-meal containing a very large percentage of ground oyster shells, or sand, or both; how many "complete" fertilisers contain about one-half the actual plant food value; the other half is simply "make weight."

Open a catalogue and go over the list of fertilisers. Take it calmly, do not be alarmed nor discouraged because a different one is given for each variety of plant. Here is a list I have just run across, the usual word, fertiliser, being supplanted by manure.

1. Potato manure.
 2. Corn manure.
 3. Cabbage and cauliflower manure.
 4. Vegetable manure for all soils. (This seems comprehensive, surely.)
 5. Fruit and vine manure.
 6. Orange and fruit-tree manure. (Probably a "special" for Florida.)
 7. Complete manure "A" brand. (This "special's" peculiarity seems to be confined to the first letter of the alphabet.)
 8. Complete manure for general use. (What more could one want?)
 9. Complete manure for heavy soils.
 10. Complete manure for average soils.
 11. Complete manure for light soils.
- { Much better than No. 4, 7 and
8 and naturally one wonders
why these do not replace them
and save worry and brain-fag.

The price for the smallest amount you can buy of all of these, and surely there are very few you can leave out of *your* garden, amounts to \$25.25. Would it not be simpler to buy a bag of bone-meal, 100 pounds for \$2.00 and a barrel of wood-ashes for \$2.50, making a total expenditure of \$4.50? If you find it advisable to add a little nitrate of soda to produce extra rapid growth of lettuce or radishes, for instance, it will cost you twenty-five cents for five pounds.

Science and careful investigation have proved conclusively that practically each plant requires a different preparation and a different percentage of the various chemical elements utilised by growing vegetation, as well as a different condition of soil and a varying amount of water. With this knowledge published far and wide, it is a matter of extreme simplicity to secure the food especially adapted to each vegetable. If experimental work is desirable for exhibition or other purposes to produce results closely approximating the ideal, by all means secure these special fertilisers. If the aim is simply to supply the wants of the household liberally and well with vegetables of a high class, there are in the market a goodly number of "all-round" fertilisers called "complete" that will fulfil all the requirements of the home garden.

There is no general fertiliser nor general method of cultivation which will suit all soils equally well. That absolutely clean sand can be made to produce any plant by the addition of a proper combination of chemicals and water is a well-known fact, but almost any soil is ahead of sand, because it contains at least part of the requisites for vegetation and holds moisture better, besides supporting the plant more firmly.

Taking the extremes—a heavy clay and a light, sandy soil—common sense and a very small amount of observation will suggest simple methods for improving the physical condition of either, at a very trifling expense. A heavy clay, which of course holds moisture, remains soggy and is difficult to work until late in the spring, can be improved to a marked extent and in an exceedingly short time by mixing in sand, or, better still, the fine stuff that washes from the road in front of your house. This is ground from the gravel, country highway, or, if you live in a highly civilised section of the United States, from the macadam or stone road.

If, on the other hand, the soil is too light, that is, contains too much sand, it can be greatly improved by the use of manure, particularly that which is mixed with straw. It can also be bettered by the digging in of the autumn leaves which usually are wasted after they are raked off the sand-papered lawns or burned and—more's the pity!—even the ashes thrown away. The waste from vegetable tops, outside leaves, vines, etc., garbage for which the average suburban dweller pays good money to have carried away, is most valuable if it can be dug directly into the soil, or better still, placed in the compost heap. All these things, as well as sod, lawn clippings, etc., not only enrich light soil, but enable it the better to retain moisture.

The greater proportion of soils utilised as gardens, as a rule, have been

worked for many generations. They have either been neglected or used year after year for a class of crops requiring about the same nourishment, and consequently they have been deprived of the major part of plant food, so that the lack must be supplied by fertilisers.

If you care to study these fertilisers in detail, and to learn the physical condition of the soil, you can have several specimens of soil from different portions of your garden analysed. Then you will know just what percentage of each necessary ingredient must be incorporated in the fertiliser best fitted to meet your garden's special needs.

The State Agricultural Experiment Station issues a report of the analysis of chemical fertilisers, which can be had for the asking, and it gives the different proportions of nitrogen, phosphoric acid and potash. If your soil needs a dominant proportion of one of these chemicals this analysis will help you to select the fertiliser needed, and, furthermore, will save you from buying an inferior article.

The fertilisers bought and spread, you are now ready for turning over the soil. How will you do it—by means of the horse-plow or must it be done by hand? The land has to be dug deeply to insure good crops. There are several manual ways of turning over the soil—by spade, by fork or by the wheeled hand-plow. I do not care for the spade, because it brings up great hard lumps that must be broken. I think the garden-fork is much better, the flat tines having a tendency to crumble the earth as it is turned over. Whichever you use, be sure to "spat" each spade or forkful to make the lumps smaller, or it will be very heavy raking.

Then there are the wheeled hand-plows and cultivators which, I think, are perfectly fascinating, but my partner believes there is nothing in the



A Pinnet, Jr., wheel-hoe and attachments

world like his two hands. When he forks the ground and a lump does not break as he spats it, he just takes it in both hands and crumbles it. Poor hands! I wonder sometimes how long they will last. The babies say, "Father, have you washed your hands before you came to the table?" and he answers, "Yes, dears, but that dirt is like a famous snile, it won't come off." However, I love the wheel-cultivator, for you can do so many things with it. You can plow, hoe, rake, cultivate, sow, harrow, and cover just by changing the attachments. Really, when I get hold of a wheel-plow catalogue I go wild, and want every combination there is. If you have a small garden, I think a simple combination plow is sufficient—one, for instance, that has plows, hoes, cultivators and rakes. If your garden is too large to plant by hand, have a seeder and marker in addition.

To go back to the simple necessities, they are a spade or a shovel, a fork, a rake, and a hoe. Of small tools, the following are essential: a good, stout trowel, a claw, pruning shears and a garden line. Oh, how I have fought for the line in our garden! This is a sample conversation.

"Dear, would you dig a row for me so I can get in the corn to-day?"

"Why certainly."

"Don't forget the garden line will you, and put it three feet from the beets."

"Oh, never mind the garden line, my eye is good enough and it takes so long to go to the barn for it."

This is how the corn looks when it comes up:



If you use a garden line, you have a fine, righteous feeling when you see those vegetables growing in the "straight and narrow path." Really, I mean that you have a great deal more respect for yourself and your garden when it is straight, to say nothing of the manifest gain in space that comes with orderly arrangement.

The claw or weeder, for loosening the earth around young plants, when it is advisable to do this by hand, costs ten cents.

A hoe.....	\$.60
A fork or spade	1.25
A trowel.....	.25
Pruning shears.....	.75
A rake with twelve teeth.....	.45
Garden line, ninety feet.....	.50
<hr/>	
Total.....	\$3.80

Good tools are real economy. Gorgeousness is unnecessary, though purchasable, and the above list gives the estimate for a serviceable outfit. Three dollars and ninety cents is certainly not an extravagant price for things that with care will last for years.

After the garden has been thoroughly plowed or dug, it should be harrowed or raked. It is then ready to become a living plan, and your sketch can be transferred from paper to soil. Run the garden line where you have planned to place your first row, and in the direction you have settled upon without reference to fences or buildings, unless your garden fence trends as you intend to run your rows, when you can use it as a base from which to measure. The succeeding lines or rows are measured from this first one, keeping them parallel of course by measuring from each end. Rake again thoroughly under the line; or if a heavy rain has fallen since the original digging, or should the condition of the soil not suit you, dig again. It will be light work the second time, and you will be fully repaid for giving the seeds the finest and deepest bed you can prepare for them. It exhausts the strength, reduces the vitality and retards the development of a plant when its rootlets are forced to pierce or to circumvent lumps, clumps and wads. On the other hand, if the ground is finely pulverised for a good depth, the roots meet no obstructions and the development of the plant is carried on without a check. Besides this advantage, the roots go further below the surface, and not only find more moisture, but are protected against drought, which seriously affects plants whose roots are close to the surface of the soil.

After the seeds are well up, keep the soil loose around them with the claw, if they are too small to be hoed. One really cannot overestimate the value of keeping the soil loose around seedlings, in fact about the growing plant in all stages. Against one thing let me warn you, and that is do not loosen the roots when you are working around them. Should this happen, be

sure to press the soil firmly over the roots again, or the heat of the sun will soon wilt them and kill the plant.

In time of drought your hoe will be your second-best friend, the first place of course being always awarded to water. Keep the soil loose, work it every day toward nightfall, or in the early morning, as this allows the moisture in the subsoil to rise, so that the roots can obtain it, but prevents emergence and evaporation. If there be a dew at night, as there usually is in August when we are most susceptible to drought, the earth should be

in the finest possible condition to absorb these particles of dewy moisture, while, if the surface be hard and caked, the dew is dissipated by the first rays of the morning sun.

You can do without pruning shears in the vegetable garden by using an old pair of scissors or a sickle to cut back the pea, bean and tomato shoots, but if you have berry or grape vines, or fruit trees, you simply cannot exist without pruning shears. They travel in someone's pocket now, just as a revolver used to travel there in Texas.



A dibble

In transplanting time you will need a dibble (or dibber), that you can either buy or make, as it is nothing but a round, pointed stick. It is used to make a hole where the plantlet is to be set. Ours is part of an old shovel handle, about twelve inches long and pointed with a jackknife. In transplanting it is wise

to have all your implements ready to hand, so that the roots may not remain long exposed to the air.

First prepare the bed or row that the plants are to live in, and make it soft, fine and comfortable. If a crop has just come out of this spot, fork in some well-rotted manure, a little bone-meal and wood-ashes, and then rake it smooth. Along your line run the point of your hoe to make a small gutter. Have by you a can of water, also flower pots and paper bags or newspapers if the seedling is tender and your plants not too numerous. Besides your trowel, you will need a basket, a box, or anything else convenient to carry the plantlets in. Take up the babies, a few at a time, being careful not to break their roots, lay them in the box and carry it to the new bed. Now make a hole with the dibble, put in the roots of a plant well down, press

the earth firmly about them, water and cover with an inverted pot, newspaper or other shade, if the day is hot and bright. Place the pot beside the plant, if the day is cloudy, that it may be ready should the sun come out. Always uncover at night, so that the plant may receive the cooling night air and dew. Continue in this manner down the row, setting the plants as far apart as required, and for this purpose it is convenient to have the dibble marked 4, 6, 8, 10 and 12 inches from the point. A professional dibble can be bought for about thirty-five cents. Its handle is curved, and therefore it cannot be used so conveniently for a space measurer.



Carefully protect transplanted plants

A coldframe is a very good construction to possess, for it enables you to start tomatoes, celery, cabbage, and other tender seeds out of the house, instead of filling your windows with boxes. If you have no coldframe, and cannot build one, but have some odd pieces of glass, as you certainly will have if there is a photographer in the house, old soap-boxes will serve the purpose very nicely.

Partly bury the box in a sheltered corner, tipping it slightly southward.



A seedbox made from an old gelatine box and two glass plates held in place by tacks

Fill it two-thirds full of finely sifted leaf mould, old sods, or enriched sandy loam, and over the box place the sheets of glass. There you have an improvised coldframe at no cost whatever. I would slant the box toward the south, because the sun is still south of the equator in the early spring and its rays do not fall vertically, but strike the earth at an acute angle. Hence the glass roof should slant to receive the full benefit of the sun's light and heat

for the greatest possible number of hours. This slant of the roof glass also sheds water and lets the snow slide off readily. House frames, or boxes with a glass lid, measuring twelve by sixteen inches, can be purchased for seventy-five cents.

In a coldframe the principle is the same, with the bottom of the box left out, and with a sash that slides, or is hinged, for the roof. Frames for either purpose can be purchased at the given price below, but are easily constructed. The modern wooden frame is made with a groove in which to slide the glass, instead of the old style, similar to a window frame, in which each light had to be puttied. The glass measures six by eight inches or eight by ten inches, four widths of the latter being used. The glass is slid into these grooves, and a tack at the lower end prevents its coming out, while the end of each piece of glass butts against the next one. This is a most decided advance over the old puttied frame, for if a glass breaks, the tack is taken out, the lights slipped



Cold frame improvised from materials at hand. The roof, covered with chicken-wire, was once the roof of a window garden

down, and a new one slides in to take the place of the broken one. A small amount of moisture may get in if the ends of the glass do not meet exactly, but this is an advantage rather than the reverse.

A three-by-six-foot sash, glazed and with two coats of paint, costs \$2.50, while the ground box on which it rests costs seventy-five cents. Three dollars and twenty-five cents for a hotbed or cold-frame three by six feet is not very

expensive, I am sure. This cost can be reduced if you or one of your friends is a photographer. There are always spoiled plates, which, when cleaned free from the gelatine that covers one side, are as good or even better than the glass that comes with a frame. A photographic plate must be flawless, cut absolutely true, and quite flat. Eight by ten inches is just the size of a photographic plate.

A hotbed is for use in very cold weather, when the seeds are started in January or February. The principle is the same, but heat is furnished at the bottom and sides by fermenting manure. It is usual to make hotbeds with permanent sides, as they must extend two to three feet under the soil, where boards would soon rot. Concrete or brick make good walls, the former, I imagine, better than the latter. Two-thirds of the inside depth of the hotbed is fresh manure, which gives off a good deal of heat through fermentation. It is extremely necessary that there be good drainage under

the manure. Gravel, sand or cinders are all excellent materials for this purpose, but if your soil is already well drained, you have a marked advantage. When the pit is dug and the walls completed, fresh manure is thrown in and well tramped down. Over it place one foot of good, rich, sifted soil in which the seeds are to be planted. The roof line should come four or six inches above the ground at the front of the frame, and twelve inches at the back. Bank earth or manure all around the hotbed nearly to the roof, in order that frost may not enter above the ground level. Hotbeds must have the glass well covered during severe weather, and for this purpose mats may be purchased made of straw, of burlap, or of burlap with one side canvas covered, ranging in size from three by six feet to seventy-six by seventy-six inches, and costing from eighty-five cents to \$1.50. Several thicknesses of old floor matting serve the same purpose, and so do cornstalks roughly woven with cords, or cedar boughs, rushes, or sacks filled with leaves, etc., etc.

A little device I have used many times is a wonderful time and memory saver, namely, the wooden marker, twelve inches long and one and one-eighth inches wide, one side painted white. On this I write the name of the vegetable, how deep to plant the seeds, whether or not it is to be thinned, and if so how far apart the plants must stand; if transplanted, to what distances they should be set, and anything else that I think I may need to know in regard to their culture. We marked these sticks when the seeds arrived in the very early spring, working together, as we always do, one reading directions from the catalogue while the other "marked," thus saving more of the



Hose and watering-can—prime requisites in gardening

time so precious when the rush season bursts upon a longing and waiting nature-loving world. If you think this small foresight is "fussy" and not worth bothering with—just try it for yourself next season.



The stick marker, ready for work. The point is to write them before spring work begins

SMALL BEGINNINGS



Small Beginnings

CHAPTER IV

SMALL BEGINNINGS

"Large streams from little fountains flow—
Tall oaks from little acorns grow."



WHEN you go into your garden and look at the corn, the sunflowers, the cabbage, do you never marvel at the wonderful power of nature which enables it to produce such a stupendous amount of tissue from the energies—physical, chemical, and vital—stored in a tiny seed, and to accomplish the feat in a few short weeks? Take the Russian sunflower, for instance, whose seed measures one-half inch in length. In three months this insignificant trifle has developed a stalk two and a half inches in diameter and frequently fifteen feet high, together with numerous leaves one foot wide, one and a half feet long, and a blossom to cap it all, weighing, when the seed is ripe, from three to five and a half pounds.

Look at the poppy, whose seeds are so tiny you cannot see them after they have fallen to the earth; but luxuriant stems, beautiful leaves, and exquisite blossoms come from these hard, round pellets in an exceedingly brief period of time. Truly, the mystery of life is nowhere more beautifully illustrated than in one's own little garden plot.



From a tiny seed grows a stem two and a half inches through and fifteen feet high, bearing a head that weighs four and a half pounds

strainer, fine or coarse in the mesh, as the size of the seeds demand, shake vigorously and plant those that do not go through. It is particularly wise to do this with radish, cabbage, and celery seeds, though the last named are so extremely fine it is difficult to separate the good from the poor. New seed, as a rule, has a bright, smooth surface, while old seed is apt to be wrinkled and dull. This does not apply to the seed of all peas, as some varieties are wrinkled in their normal condition.

If your garden is not very large, you will always have some seed of each variety that you planted left over, and you are inclined to think, "I will not have to buy seed next year; that is one garden expense

As the future plant depends on the strength of the seed, it behooves us to pay strict attention to its ancestry; in other words, to be careful where it is bought and to see that the best the seedsman offers is purchased, even though it costs a trifle more. A fine, firm, large seed naturally stands a better chance of germinating and of thriving after germination than one whose small and shriveled condition indicates conclusively little life within.

If you should get seeds decidedly mixed in size, it will pay you, and pay you well, to select the largest and plumpest. In a small package the size is easily estimated while holding the seeds in the hand. For a larger quantity take a kitchen



Gorgeous blossoms from little, hard, round pellets



A sunflower towering fifteen feet above the earth



Martynia

Corn

Sea kale

Bean

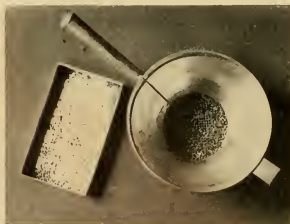
Squash

Good and inferior seed from the same packet. Note the difference in size of kernels among the opened seeds. This photograph shows also "the bean's secret"

less." This is an extremely foolish thought, for in a great many varieties the left-over seeds are doubtful of germination, and you are liable to lose a portion of your crop; for if they do not germinate, it is generally too late to re-plant. I know it seems wasteful, and you may argue that occasionally some seeds (usually wheat) taken from old Egyptian tombs, which have lain dormant thousands of years, have germinated and grown. Nevertheless you run a risk; the seeds may keep, but then again they may not. If you feel extremely wasteful in throwing the seeds away, give them to some one with less garden capital, telling him frankly that these are left-overs from last year which may or may not grow, but that there is pretty fair possibility of a small harvest to be secured by planting them.

If you were buying cows, horses, or chickens, you would be careful to see that they had been well bred from fine, healthy stock. Why should you not be as careful in the selection of your seeds? You will find, in looking over catalogues, that each seedsman makes a specialty of one or more varieties of plants, and he supplies other seedsmen with these particular varieties, always, of course, saving his very finest stock for his own customers. For instance, one man may make a specialty of sweet peas and corn, another of potatoes, another of nasturtiums and tomatoes, another of cabbage or beans. Would it not be wise to buy each variety directly from the firm which has expended time and money in developing it as a specialty? Here, again, one sees the importance of having every prominent seedsman's catalogue for each

season. If you request a catalogue by mail, your name is usually placed upon the mailing list, and the book comes to you without asking each successive year and as soon as issued. Its appearance makes another garden anniversary, and serves as a reminder of the preliminary arrangements to be perfected, the plan of campaign to be pursued. As a rule, it is easy to determine by a catalogue the line on which most effort has been expended, even if the specialties are not frankly stated.



Sifted seeds. Those in the strainer are to be planted; those that passed through are to be discarded

If you do not know the specialists in your community, buy your seed from a firm which you feel sure handles only good stock. If your seed is poor, no matter how hard you may work, you cannot expect your garden to give as good results as if your seed had been carefully grown under the conditions most favourable to the best development of each variety.

There are several other things to be considered in connection with this most important matter of seed selection. One is, that if you buy seed which has been grown in a colder climate than your own, you give it such a good time that it jumps for joy and makes an earnest effort to excel itself. Some growers believe that a change of air improves the health of seed, whether the removal takes it to a warmer or a colder section of the country. Still others think it wise to save their own seed, if particularly fine specimens, because these indicate that the plant has become acclimated, has adapted itself to the

soil peculiarities. If you do save your own seed, select for the purpose an exceptionally fine vessel, and allow it to ripen thoroughly. Then dry the seeds slowly and carefully, and do not fail to protect them from frost, moisture and high temperature. During the winter, it is best to place the seeds in boxes and stow them away in a dry, moderately warm closet, being careful to label the boxes.

Seeds may be divided into three classes: those that are so hardy they may safely be sown in the fall and allowed to remain all winter in the ground; those that can be sown very early in the spring, as they are able to withstand the last slight frosts; and those that are so extremely tender they cannot be placed in the garden until the earth is warm and mellow, the sun strong and helpful. Those that can be sown in the fall, are few in number, such as onions, leeks and sweet peas; and there is a diversity of opinion as to whether or not much is gained by so doing. Personally, we prefer spring sowing. Early spring sowings can be made of lettuce, radishes, early corn, early peas, beets, carrots, parsnips, salsify, etc., but such things as tomatoes, melons, squash, etc., cannot stand even a slight frost.

If you have a small garden, and desire to have early vegetables, it is certainly most wise to sow seeds as soon as the ground can be worked. I remember a conversation about our first little garden which was in the suburbs of a great city. As we were city folk, "tenderfeet" so to speak, our neighbours were glad to give us pointers and help us out, although our queer notions naturally gave rise to hilarity on many occasions.

One of these neighbours was leaning over the hedge early in the spring passing the time of day.

"Good-morning! I guess you are going to have a garden by the looks of things; got your plot spaded up already."

"Oh, yes, we hope to raise a few things. Our peas, lettuce, radishes, beets and corn are in already."

"Corn in!" (in great consternation). "You can't plant corn in April. It's too early, it'll freeze."

"Well, maybe it will, but it will only cost five cents to plant some more, and if it doesn't freeze I'll have corn before you do."

"Well, it will freeze sure enough, and then you'll be sorry."

"All right; we'll see."

We did see and we had a good laugh at our wise neighbour when we presented him with an ear of corn, just as his own crop was beginning to think



Our neighbours were glad to give us pointers

about tasseling. Of course, we might have failed, but we did not then, and we never have yet.

One of the curious things to me in the study of seeds is their method of germination. Some have a hard, shiny shell that is not easily injured, yet they require warm weather—the squash and melon, for example. Others have merely a soft, wrinkled skin, but they can be planted exceedingly early—such as peas and corn. Others are so slow of germination they have to be soaked in warm water for twenty-four hours to produce rapid germination; parsley is one of these. There are some seeds that come up “with their night-caps on,” as the children say. The scorzonera seed, for instance, bursts the outer shell and carries it up on the top of the leaf. The first leaves of the bean are really the fleshy part of the bean itself. I remember the sweet look of surprise on our girlies’ faces when I opened a bean last year and

showed them the tiny leaves curled up asleep, and the little root ready to push out and go to work. They called the root "feet," the leaves "hands," and the two together the "bean's secret."

Some seeds must be planted early in seed beds, coldframes or hotbeds, carefully protected, and transplanted once before they are set out into the garden. Among these are celery, tomatoes, cabbage, and cauliflower. If their seeds were sown in the open, when the soil is warm, the season here is not long enough to mature the product. Always sow seeds in rows, and rather thickly to insure good germination. When they are well up, pull out the weakest as soon as possible, to allow the others a better chance for growing strong and healthy. When the seedlings are large enough, or have their second set of leaves, transplant them carefully into another well-prepared bed of fine, sandy loam, using the dibble and setting them two or three inches apart, as the instructions direct. Water carefully, and protect them for three or four days from too much sun-heat until their roots are thoroughly re-established. When they have attained a good, stocky growth, and the weather is settled, plant them in the garden, after preparing for their reception, and space them in accordance with cultural directions. It is advisable to make the holes either with a dibble or trowel, and to pour a little water into each hole, thus insuring plenty of moisture for the roots. Then set in the plants, fill the spaces between and about the roots carefully, pack the earth firmly around the plants and water them again to help in settling the earth still more securely around the roots. Protect the plants with flower pots, newspapers, paper bags, strawberry boxes or other shelters from the sun. If you can do the transplanting on a damp, cloudy day that betokens rain, you will be pretty sure to have marked success in the operation.

The depth at which a seed must be planted is a subject much discussed.

Some advise sowing a seed at twice its own depth, but I do not think that rule always holds good. The seedsman usually gives instructions in regard



Parsley seed asoak before planting. The seed will presently sink



Making a deep furrow with the hoe

to this, and I think it is wise to follow them. I will give you later a list of seeds and directions for their culture that may help you in your garden next year.

There is a little device I have read about that helps to make a furrow even in depth. It is a board with a cleat on it, as shown on page 55, and this cleat is of the desired depth and firmed into the earth up to the board. This would require several "pressers" of different cleat depths, and if you do not care to go to the trouble of adding to your stock of tools, draw your hoe handle

along the garden line and press it into the soil to make your furrow in a simple manner.

If your rows are long and the seed is to be planted fairly deep, the wheel plow is certainly the quickest and simplest tool for this work. If your implement has a seeder attached, the work is all done mechanically, for the plow opens the furrow, the seeder drops the seed at the proper intervals and another clever device covers them. Then the human feet, following the plow, press the earth upon the seeds, so that the entire operation is com-



Your hoe handle will make a good furrow

pleted mechanically and by simply walking once down a row, pushing the wheel-hoe in front, not with a continuously steady strain, but by a series of intermittent pushes not at all tiresome even to one untrained in muscular effort. I have taken a fence picket and pressed it into the earth to its own depth, thus making a broad, firm surface on which to sow the seed. Always press the earth firmly over the seed, unless especially instructed to the contrary,



Sowing seed in a furrow made with a presser

so that the rootlets may have a better foothold and the soil's moisture be prevented from making its escape.

It is this moisture that starts germination, and for the same reason the seedling should be kept well cultivated from infancy to full maturity. The moisture from the subsoil is continually rising and passing off through the tiny channels or chimneys of the soil. Stirring the surface destroys the draft, as it breaks or fills up these channels, so that the moisture is conserved, a consummation devoutly to be wished. The breaking of the surface and the blocking of these channels also cause the earth surface to become a mulch. You will invariably remark in well cultivated gardens that, even

in dry weather, moisture is found just beneath the parched surface. That is because the rising humidity cannot escape, being confined below within easy reach of the rootlets which absorb and convey it to the stalk and leaves, to the flowers, fruit, seed pods, or tubers, all of which require it in order to thrive. In maturity they repay most generously all the labour and care given to them throughout their short span of life.

Should there be a long, dry spell after the seeds are sown, be sure to give them water, as it is difficult for the delicate seed leaves to penetrate a hard-baked surface. If the seeds are by nature slow of germination, it is well to plant those of rapid germination with them, that the surface may be the sooner broken. Radishes may be planted with carrots or parsnips, and in this way an extra crop be secured of the quick-growing, helpful radish.

STAY-AT-HOMES AND PEREGRINATORS



Types of Stay-at-Homes and Peregrinators

CHAPTER V

STAY-AT-HOMES AND PEREGRINATORS

BY THIS I mean seedlings that stay at home and those that are forced to pack their goods and chattels for removal to foreign parts. The peregrinators, poor things, are really dispossessed. They must "move on," whether they wish to or not, and in spite of the wrench their root system receives, no matter how carefully the transplanting is accomplished, nor how skilfully they are "personally conducted" to a strange land.

The stay-at-homes have a much easier time. They have inherited the old homestead, so to speak, and can settle themselves comfortably, grow as fast as possible, marry and bring up their children in unjarred peace; while the peregrinators have to become used to a new locality, make new friends, and are almost invariably checked in their growth.

Just think what a jar it must be to the feelings of a cabbage plant that grew next door to celery, and had become fascinated with the graceful plumes, to lose all her lovely friends and be doomed to live the rest of her life with the stiff, austere corn, or the flippant feathery carrots! Don't you think

we ought to move her as carefully and tenderly as possible, so as not to upset her nerves any more than absolutely necessary? If you are counting your harvest you certainly feel in duty bound to guard your charges against undue strain. Be sure to have the new home as comfortable as possible. Make it soft, make it fine, make it rich. Right here it might be wise to go a little more into detail about fertilisers, not that more are required for transplanting, but in order that the home gardener may better understand the reasons for using various plant foods at different times, and be well posted in regard to just what each contains.

I spoke in Chapter I. of using manure, bone-meal, wood-ashes and lime, and of the necessity for protecting manure in order to retain all its virtues. I might add here that if you have a stable of your own, land plaster sprinkled on the floor of the stalls absorbs all the ammonia, and disinfects thoroughly. This is equally applicable to a poultry-house, and the plant food resulting from this treatment will be more than sufficiently increased in benefit as a fertiliser to repay the cost of the plaster. Ammonia is the most highly prized, and withal the most evanescent portion, of barnyard products.

For full development plants must have nitrogen, phosphoric acid and potash. I do not intend to go into scientific details in regard to these elements and combinations. I only wish to show how these three plant requisites are embodied in the fertilisers of which we speak. Manure, for example, contains all of these vital requisites in the following proportions: In a ton of manure, there is 605 pounds of organic matter, nine to fifteen pounds of nitrogen, sixty-seven pounds of mineral constituents, four to six pounds of phosphoric acid and five to thirteen pounds of potash. You will say at once, why use anything else, when this fertiliser contains every requisite for a plant's development? Simply, because some of these materials become available so slowly that they will not all benefit a plant during its growing. For instance, but one pound in seven of the nitrogen in manure is available for the use of the crop fertilised with it; and, according to the above figures, it takes almost a ton of this old, reliable friend of the planter to produce the seven pounds of nitrogen.

If a crop of potatoes in a given location in the garden yields a poor return, add manure to the land and the next crop may be hardly any better, but the following crops will show the benefit.

Manure does more than merely fertilise, it adds body to a light soil

and breaks up a heavy soil. It throws off heat during fermentation, and keeps the soil at a more even temperature. It aids materially in holding moisture, and as three-fourths of all garden crops are water, this is an important fact in its favour. Because manure is so slow to decompose and give up its organic parts, it is wise to use a little of it along with some chemical fertiliser. A garden may have too much manure. We had one once which showed the truth of this, for the result was gorgeous stem and leaf growth, but no vegetables worthy of mention. In a case of this kind, manure should be withheld for a year or so, and a little lime applied as well as some finely sifted coal-ashes, and the ground must be thoroughly and frequently cultivated.

Bone-meal is used principally for its phosphoric acid, though it contains also a small amount of nitrogen. Its animal matter and lime, though not given much consideration, are valuable.

Wood-ashes contain thirteen chemical elements (a propitious number) with a predominance of potash, but a fair share of phosphoric acid also. It is readily discernible that nitrogen is the difficult element to obtain, and, given nitrogen, it is a simple matter to add phosphoric acid and potash.

As I have previously stated, good manure is rich in nitrogen, but gives it off very slowly, so that it is necessary to add either nitrate of soda or sulphate of ammonia, and to inoculate, or vaccinate, the seed or soil with nitrogen-accumulating bacteria, or to sow and plow under a léguminous crop.

A young plant usually needs nitrogen more than an old, well-established plant; therefore it is wise to apply a quickly available form of this element within easy reach of newly set out seedlings, or of vegetables that need a quick growth, such as radishes, lettuce, rhubarb, etc. Nitrate of soda is probably the cheapest, unless you have poultry manure, which costs you nothing. Let me add a word in regard to that by-product of your "farm." If you have fed your chickens ground green bone and beef scrap to produce more eggs, you have increased the value of the manure fifty per cent., for it will then be very rich in nitrogen. Under ordinary circumstances, with grain-fed fowl there is a good proportion of this element, together with phosphoric acid and potash. This fertiliser gives up its component parts quickly. Stable manure cannot be compared with it in that respect, but on the other hand it contains no humus to improve the texture of the soil. It may either be dried out, and used in that form, or placed in a good compost heap, with vegetable tops, vines, etc., and some good, sandy loam. Turned

and forked over often, it will give you the very finest kind of quick-acting fertiliser as well as the best potting soil obtainable.

A plant in fine growing condition, fed with an abundance of every kind of plant food, resists the attacks of disease and insects much better than a weak, underfed plant. A plant's growth is measured by the least amount of a certain chemical constituent it is able to obtain, and not by the greatest amount of all the others. For instance, tomatoes require potash and lime. Suppose you set the plants in a bed rich in phosphoric acid and nitrogen, but lacking almost entirely the two former elements. The size of the fruit will correspond to the amount of lime and potash it obtains. So you see it is necessary to give complete fertilisation, and that is the reason we use manure, bone-meal and wood-ashes, though it has been demonstrated that fine crops can be raised on the last two alone. In placing manure on the soil you are building ahead of this year's garden, storing up food to be available in the future, while the chemical fertilisers endure for a short time only.

I must not forget to mention soot. When your chimneys are cleaned and any soot obtained, treasure it as gold. When the kitchen range is cleaned, there is always an abundance to be had, for that is done, in most houses, only when the oven refuses to bake. Place the soot on your strawberries, if it be early spring, or upon any plant that must make a quick growth. I am afraid all that comes from our house goes either upon the roses, the violets or the sweet peas, for no matter how much interested one may be in the vegetable garden, the tender corners of the heart are always saved for the flowers.

The stay-at-homes, seedlings that are allowed to remain where the seed was sown, need to be thinned as carefully as possible, the first time when they are about two inches high, in some cases even sooner. The stockiest plants should be allowed to remain, after thinning them, to about one-half the distance the plants are to stand from one another. When these plantlets have a still sturdier growth, they may be finally thinned to the distance apart at which they are to remain. I have already spoken of the necessity for firming the soil well around the remaining plants, in order that the roots may not be left loose, so that the plant will wither and die.

One very difficult task for the amateur gardener is to thin with sufficient heartlessness. One always feels the plants can be left a little closer to one another than the culture directions state, and thus a plant or two may be gained. I speak from long experience, for all the thinning in our garden is

left to me, as the other gardener would not pull up a plant and let it die—no, not he! This amateur peculiarity is specially noticeable if one is raising a new vegetable or flower and is not quite sure how large in circumference nor how high it will grow. For example, the seedsman says that endives must be thinned to eight inches. I gave mine only six inches, for it did not seem possible those delicate seedlings could develop such magnificent heads of salad leaves. Mine were fine, but I soon realised they would have been finer had I given them their allotted space. I would have had several heads less, but one would have served the purpose of two.

The poor little ones that have to take up their beds and walk, or, to be more exact, have their beds picked up for them, need our special care and attention. I have already described the method of setting them in the ground, shading and caring for them afterward; now I should like to make a few suggestions in regard to preparing them for transportation. The most vital point about it is root growth. If a plant has a fine underground system, or foundation, the overground, or leaf system, is pretty sure to be all right. If the roots are spread about, one plant tangled with another, they are sure to be broken when lifted to be separated and set elsewhere. If, however, they have been confined to a reasonably limited space, one plant separated from another, they are compact, and can be transported with a minimum check to their growth. If a plant's roots have been torn and mangled, they have to heal, and the plant must make new roots and become firm before any growth can take place above ground. On the other hand, if the roots have been confined to a small space, say that enclosed by a strawberry box, they can be set into the ground, where they will immediately expand without shock to their system, and the growth above ground will continue unchecked.

There are innumerable receptacles which can be used for starting seedlings, and no doubt several will suggest themselves to you. To me, one of the chief charms of gardening is the fact that there is always something new or different for each year, as well as for each operation. Probably the tin can is the most popular of these transplanting devices. If set on the stove until the solder melts and the seams open, the bottom can be removed and the sides held in shape by a piece of wire twisted around the middle. A board or a trayful of these is carried into the garden at planting time and each is slid off into the hole prepared to receive the plant. A knife is then run round the inside of the can, and it is lifted upward, leaving the soil and roots free.



A tin can, the bottom and seam of which have been unsoldered, the seedling in it ready to be slipped off into the hole

The can may be left in the hole with the plant, in which case the wire need not be loosened, but the can should be drawn up until the top of it is about two inches above the soil. This forms an absolute protection against cut-worms, and is specially valuable in new soil, or sod land when first under cultivation. If you raise tomatoes in cans, I would certainly advise this method of transplanting, for it is the most aggravating thing in the world to have an entire plant cut off just at the top of the root. Other insects mutilate a plant, but there is some chance of saving its life. Cutworms slay outright. It might appear that the can would confine the roots so that they could not obtain enough nourishment; on the contrary, they grow deep and spread out below the can, which also protects them from drought. These cans can be used over again, year after year, if they are stored away after their spring usefulness is ended. Each bottomless can has a little fine gravel or

sand put in below it. Powdered charcoal (or the pieces of charcoal that can be purchased from any plumber or tinsmith, and which are easily crushed fine enough with a hammer or hatchet) is the very best thing in the world to add to the drainage layer at the bottom of a pot, can or other receptacle designed to hold the roots of a plant. It will keep the earth sweet and loose, and has also some plant-food value. The tin is then filled with finely screened, rich loam in which the seeds are planted. Several seeds are put in each can, and the stockiest seedling allowed to remain.



Paper pots

Flower pots can of course be used, but they are more expensive than the cans, which are generally thrown away as a perfect nuisance. Paper flower pots are decidedly fine for this purpose. They are made of a brown, practically water-proof cardboard, cleverly cut and folded in such a way that they may be easily and quickly opened at side and bottom. When the seedling is grown and ready for the garden, the pot is unfolded, the plant released, and



Strawberry runner caught down with hairpin; soil loosened from pot with knife



Seedling in a paper pot

the earth, if moist, will retain its shape. These paper pots can be purchased from dealers, or direct from the manufacturers, in sample lots of one dozen, or in cases of 1,000. They cost from ten to sixty cents a dozen, the sizes ranging from two and one-quarter to six inches.

Berry baskets are good nurseries for seedlings, especially the small, square or oblong ones with flaring tops, used for strawberries and raspberries. The spaces between the strips allow good drainage. The baskets, when filled with earth, should be set in a shallow box, so that any rootlets which come through the openings may not be injured.

If you wish to limit expenses as much as possible, there is another re-



Seedling about to be transplanted from a paper pot: no shock to the root system

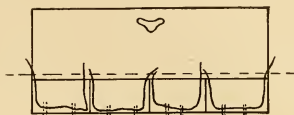
ceptacle that comes to almost every house and is as promptly thrown away, when emptied of its contents, as the berry baskets are. I mean charlotte-russe cases. The bottom can easily be pressed out, and there is left a pasteboard cylinder, as good as a tin can, though smaller.

Roofing felt could be made to answer the same purpose, and it has this advantage, the cylinders can be made any size desired. A strip of this material, five by ten inches, rolled around and overlapped one inch, tied with heavy string or wire, makes a good size for tomatoes, peppers, eggplants, etc.

You remember how Celia Thaxter started all her flowers in eggshells, placed in boxes and set in windows of her Portsmouth home, and how tenderly they were transported each year to the Isle of Shoals, where she lifted

them, shells and all, out of the box, crushed each shell a little, and set it into the hole prepared? It is a fascinating plan to read about, but it seems better adapted to flowers than to vegetables. I should think early lettuce could be started that way, but many vegetables would become misshapen in the confinement of an eggshell.

Take a piece of sod, turn it bottom side up and plant a few seeds in it. When the selected seedling is large enough to go out of doors into the garden, the sod can be buried below the surface and thus the roots have the very finest bit of earth their hearts could desire.



A bottle carrier utilized as a compartment seedbox

A partitioned box, such as cider, beer or other bottled liquid comes in, cut down one half if too deep, makes an ideal seedbox. A small auger-hole should be made in each partition to allow for drainage. One obstacle presents itself here, and that is, how to lift out the seedlings with the earth that belongs to them. I think it can be overcome in this manner: Take a strip of heavy cardboard or roofing felt, lay it across the bottom of the box and up the opposite sides, with an inch or so to spare. Over this put the drainage layer, then the loam. If the earth is moist, as it always should be when one is about to lift a seedling in it, the entire section of soil comes out by lifting it with the ends of the strip.

If the seedlings are grown in the open ground, and must be lifted for transplanting, there is a very good little tool called a plant lifter, a steel cylinder on a long handle. If this is placed over a plant, and pressed into the soil it brings up a ball of earth with the roots. A hole in which to set the plantlet can be made with the same instrument.



Berry box and charlotte-russe case—each a good nursery for seedlings

When a plant has been started in the house, hotbed, or coldframe, it should be hardened off, as gardeners term it. That means a gradual inuring of the plant to a colder temperature, so that it may be able to endure cool days and the night air without succumbing to either. This is done by allow-

ing it a little more air each day, then a little later in the day and finally at night. It is taken for granted that the seedlings are in a protected spot.

If your own seedlings, or those that you purchase, grow too tall and spindly, it is wise to pinch off some of the leaf portion, being careful not to mutilate the new inner leaves. Then set the plant deeper into the soil than it was originally, in fact down to the seed leaves, so that the stalk may not be too long and bend over. This spindly growth is particularly apt to occur in tomatoes and cabbage.



Seedling topped before setting in the garden

THE SURVIVAL OF THE FITTEST



Corn-smut decoration



Cabbage-worm embroidery

CHAPTER VI

THE SURVIVAL OF THE FITTEST



HOW a plant can survive now a days is a mystery, for almost every one has some special enemy or enemies; in fact, their name is legion. There are biters, borers, suckers, and cutters; there is mildew, rust, blight and scab. While there are two or three wholesale methods of destroying most of them, there are about two dozen "critters" that have to be known by sight and fought by special methods. All insects may be divided into two classes, the biters and the suckers. The way to get rid of the pests that bite and chew is to poison their food, but the fellows that suck the juices and pay no attention whatever to poison on the outside surface of a plant have to be met and slain in open battle.

In the spring the very first chance we get we sow lettuce and radish seed, and then "sit up nights" to see the seedlings appear. Oh joy! the ground is cracking, and joy again the tiny seed leaves appear. Aren't they strong and lusty? Did we ever have any quite so promising before? Surely nothing can happen to them; we made their bed so soft and deep and gave them so much to eat. Then "woe is me," some morning we go out to look at them before breakfast and they are lacework—just riddled with tiny holes as though the fairies had been having target practice or a *schutzen-fest* during the night. We look closely, and find tiny black creatures all over them, a touch on the leaves and they jump away—the black flea beetle has arrived. What shall we do? "Poison the leaves," they say, but I hate to do it. I am always

afraid the leaves might not be thoroughly washed before they are served at the table. Still it must be done. There are two things that the experts tell



Tobacco for certain sucking insects is powdered and blown or stems are steeped and the tea sprayed

us to do to rid the plant of them—spray with Bordeaux mixture, or dust with powdered tobacco. Some there are who compound a decoction of both. Last year I dusted our plants with fine coal-ashes, in the early morning when the dew was on the leaves, and sent these creatures flying. Dusting with air-slacked lime, land plaster, or Paris green and flour are other methods used successfully.

Then there is the potato bug—also called the Colorado beetle—(I wish they would keep her home). Everyone knows and loathes her. She is soft when she is new, and hard when she is old; she chews the leaves, therefore they must be poisoned. Use Paris green, or an arsenical poison, but if you have little ones who might possibly taste this “sugar” as the small mind might conceive it, pick the bugs by hand, and there will be no danger. If you don't want to touch these creatures, and I don't know anyone who particularly craves the task, take a can of kerosene in the left hand, place it under the bug and push her into

it with a stick, a shingle, or a stiff flat paint brush. In this illuminating oil she quickly expires.



Bordeaux mixture, the standard fungicide, invaluable for the home garden

You can do the same thing with the squash-bug and striped beetle that love melons and cucumbers, only they must be killed outright, and are if you use a poison. Kerosene emulsion and whale-oil soap, which are the best things to stop them in their mad career, are better, however, and as neither of these are poisonous, you can use them without fear of

harm to investigating wee ones, or even nature-loving adults.

Do you know how it feels to go into the garden of a bright summer's

morning and find a lot of your plants lying prone on the ground? Mr. Cutworm came around last night. He must think he is Father Time with his scythe looking for some mowing to do. He is a coward for he works out of sight just under the surface, not in the open, and only at night at that, when good God-fearing folk are asleep in their beds. If you dig around the roots of the plant you may find him and you may not; if you do discover him just remember that he is a brownish fellow, with stripes or bands and is rather fat for his length of one and one-quarter to one and three-quarter inches, and he



Kerosene emulsion, effective with plant lice and other sucking insects



Luring night-flying moths to destruction. One such is mother to the cut-worm

has a neat little pair of pruning shears attached to his head. If you don't find him put poison bait about near the stems of the plants. Dip some clover into Paris green and water, or make a dough of Paris green and bran and sprinkle that around. Mr. Cutworm's mother is a night-flying moth (you see the entire family belong to a disreputable gang and keep late hours), and she may be caught by placing a lighted torch or lantern on a brick in the centre of a tub of water which has kerosene floating on the surface. Her ladyship is attracted by the light (perhaps she wants to see whether her bonnet is on straight or whether her gown is becoming), and flies straight into

the light, becomes stunned, falls into the tub and finds a watery (or oily) grave. The old-fashioned way to catch this gentleman (her ladyship's son) was to put stones or chips near the young plants and lift them in the early morning. He is accustomed to hide away in just such places to take his daytime sleep. I needn't tell you what

to do with him when you find him.



Vile smelling whale-oil soap, bad for scale insects and good for currants and gooseberries

There is a little fellow striped with yellow and black (I don't know whether he is partial to Princeton or not) that dotes on squashes, cucumbers and melons when the vines are young and tender. He eats both foliage and stems and has to be

sprayed with Paris green and water, or dusted with Paris green mixed with flour, road dust or land plaster. The plants may be protected by a mosquito-netting tent, but I think few of us would go to the trouble of constructing tents unless we were extremely fond of those particular vegetables which attract this annoying creature.

The squash-vine borer is a sly fellow. He creeps inside the stems of melon, cucumber and squash vines and eats the heart out of them. If your vines wither and die as a result of their feasting, the best thing to do is to burn the vines at once. This heads off next years' crop. If, however, you catch the vines just beginning to wither, cut out the borer, who is whitish and about one inch long, and has a brown head. After destroying the enemy cover several joints of the vine with earth so that new roots will form at these points. This gives the plant a better chance to recover.

When I say "squash-bug" don't you say "Ugh!" I doubt if she has any friends. The yellow eggs are laid on the under side of the leaves. The youngsters are called nymphs and they suck the sap of the leaves, often causing the entire plant to wilt. This chap when grown up wears a rusty black coat, with a yellow vest, and he doesn't smell good if you touch him. They say, hand-picking morning and evening, when the bugs are drowsy, is the best remedy. Or you can place boards on the ground around the plant and many of them will be found underneath in the morning. I leave the squash bugs to the other member of our gardening committee, and I believe he crushes the bugs in a fold of the leaf.

Have you ever noticed in August the sudden appearance of swarms of

white butterflies? Have you ever driven through a farming district and noticed the roads full of them? Sometimes they are so numerous that it seems as though they could not fly away before the horse's hoofs and the carriage wheels have crushed them. Last August I saw such a sight. There were tall hedgerows on either side of the road, but no one needed to tell me what was behind those hedgerows. The butterflies announced that, and soon an opening showed me the cabbages and cauliflower, acres of them. It is too bad that these pretty white creatures should have such troublesome children. Really, they are enough to drive one insane. You know them, too, if you have ever had cabbage, cauliflower, kale or the like in your garden, little, green, soft creepers, voracious children, that grew into big, green, soft creepers by eating great holes in the vegetable leaves. These are imported creatures and I wish they, too, had stayed home. Our own worm is bluish with yellow stripes, though the butterflies can scarcely be distinguished from one another. One pound of pyrethrum powder which has been mixed with five pounds of flour, put into a tight vessel or tin box and kept for twenty-four hours, then dusted into the leaves at nightfall, may discourage these creepers. The other poison powders previously described may also be used, and I have heard of sprinkling salt on the leaves which is said to cause the worm to "melt away" when it touches him, but I have never tried this. I fear there would be damage to plants unless extraordinary care were taken. There is one thing, however, which will settle these crawlers, and their cousins, the loopers, also. That is the resin-lime mixture combined with Paris green and Bordeaux. The cabbage (also cauliflower and Brussels sprouts) should be sprayed thoroughly with this twice, once before the white butterflies appear, and again in three weeks or so, being careful, however, *not* to spray cauliflower after the flower has set.



Paris green for insects that chew, may be used as a powder or a spray

The cabbage plusia is as fond of that vegetable as our friends from Deutschland. His mother is a dark-gray moth with a silver mark on each wing (not sterling), and he is pale green, translucent, with paler stripes from head to tail and more like the measuring-worm. He goes right

into the heart of things and can riddle a head of cabbage thoroughly in short order.

Plant lice or aphids also come to cabbages. They are of a purplish tinge and make great clusters on the stems and young leaves. They also visit cauliflower and turnips. Kerosene emulsion is good (or bad) for them, or tobacco tea, made by boiling one pound of tobacco leaves in two gallons of water for a short half-hour, and spraying it on to the plant when cold.



Crawlers will seek the shade of an inviting shingle. "Reconcentrado" the worms

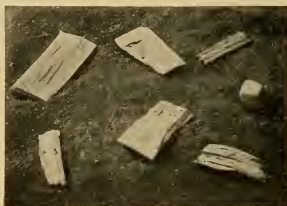
former, which is a tiny sucking creature with white wings with two black spots on them, while the latter must be picked by hand.

You remember the black butterfly with yellow and blue spots on her wings? She is a beauty, and her children are likewise handsome—green caterpillars with yellow spots. They are fond of celery, parsley, and the like, but as they are not very numerous, they can be exterminated by hand.

The poor cabbage goes lame, gets the club-foot (a swelling of the root), and succumbs to it in a short while.

Cauliflower, turnips, and other members of the cabbage family also have this peculiarly named disease, and when it appears the only thing to do is to cease growing them and buy these vegetables for two years or more, until the germ has been starved out of the soil.

If the onions turn yellow, you may know the maggot is at their roots. Spray the lower stem and the soil with kerosene emulsion. If this fails, you would better pull the injured plants and burn them. These creatures, which are the larvæ of a brown



Cut-worms will hide under chips and stones near the plants and can be killed in the early morning



The knapsack sprayer in action. It throws a spray fifteen feet high, and is therefore useful for spraying trees as well as bushes and vegetables

fly, also infest cabbage and cauliflower, and the same remedy may be applied.

Do you remember the May beetles, or "June bugs" as we used to call them, that flew into the school-room in the evening during study hour at boarding school? And how scared some of the girls used to get for fear one would light on them or get in their hair! June bugs are funny creatures, always bumping their heads against the ceiling and doing idiotic things generally. Their young are grubs which feed on the roots of plants. They generally come in grass land and moles are very fond of them, so we let Mr. Mole live, though we do hate his modern method of "subway" travel. If these grubs get very bad, trap the moths with the torch in the kerosene-and-water tub.

These are most of the "critters" that disturb our garden peace. But there are others, especially the fungi, which are themselves plants that live on plants. Corn-smut is one of these parasites. It is a fungus that grows, very rapidly and may attack any part of the plant's system, causing a swelling whose silver-white coating conceals a peculiar black mass filled with fibres. As I said before, burn it, stamp on it, anything to destroy it at once, before it sows its spores to be reaped again in increasing quantity in the same crop the following year. There is no known "medicine" for it.

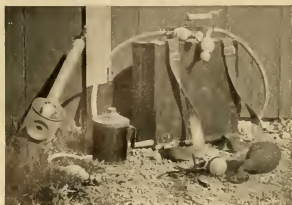
Bean-rust comes in damp weather. It makes a rusty spot on the pods and leaves and can be controlled, if not obliterated, by using Bordeaux mixture, but I should be afraid the beans might retain a little of it when prepared for the table. Its long name is anthracnose and it is not at all a pleasant visitor.

There are various outfits for spraying the arsenical and other insecticides. The kind you need depends upon the size of your garden. If it is large you will probably need a barrel on wheels. Of these, there are numerous styles. If the garden be small, one of the hand sprayers is sufficient. The knapsack is a good one. The tank is carried on the back by straps over the shoulders, and a nozzle or rose spray is held in each hand. It throws a spray about fifteen feet, and it is therefore equally useful for both vegetables and young fruit trees.

The powder may be blown on a plant by means of various kinds of bellows, and by rubber balls, or by placing the powder in a coarse muslin or cheese-cloth bag and dusting or shaking it over the plant. Many other simple and inexpensive methods will occur to the reader.

The poor potato has a "hard road to trabble." It not only has the

Colorado beetle, but scab and blight as well. The scab is a fungus disease of the tuber, and this fungus may be either on the seed potato or in the land, or both. There are three ways of treating seed potatoes for scab before they



Various types of spraying apparatus, including a dollar squirt-gun of tin and a knapsack sprayer

are planted. Soak them in a solution of corrosive sublimate, or a solution of formalin, or expose them to the light for several weeks before planting. The corrosive sublimate solution is made thus: Two ounces of the powder are dissolved in two gallons of hot water. When dissolved pour into a barrel that already has thirteen gallons of clean water in it. Let it stand for several hours, stirring once in a while, then put the

seed potatoes either cut or whole into this solution and let them remain an hour and a half. Corrosive sublimate is a deadly poison and potatoes treated in this manner should never be fed to animals. I think I "pass" on this method. Eight ounces of formalin in fifteen gallons of water is the proportion for this germicide. The seed should be soaked in the solution for two hours, placing the seed in a bag and suspending the bag in the barrel. A crop from seed treated in this manner is not poisonous. It seems to me good, pure sunlight is the best method, and authorities differ greatly on effects obtained by chemical treatment.

The blight affects the leaves and stems of the plant and may even affect the tuber itself. It looks like white mildew and should be prevented, as it cannot be checked when it once has a good foothold on the vines. Bordeaux mixture thoroughly sprayed on before this disease appears will often prevent its coming at all. Celery has a blight or rust and Bordeaux is also its cure.

Beets have scab like potatoes, but they cannot, of course, be treated in the same manner as the potato. If you have scabby potatoes, be sure *not* to plant beets in the same place.

If you do not mind evil odours, there is a remarkable insecticide known as carbon bisulphide which will kill the maggot. It is made by passing sulphur fumes over red-hot charcoal, and liquefying the vapours by condensation. It is a clear, white liquid, heavier than water, which evaporates very quickly and is inflammable. It does not harm the skin or fabrics (I mean the

chemically pure product), but the fumes do kill all insect, plant and human life if inhaled freely. It is particularly valuable to the gardener in destroying harmful insect life that is in the earth, where the ordinary remedies are useless. The vapour is heavier than air and naturally falls, therefore if injected into the soil where the unwelcome insect lives, the fumes will work their way between the particles of soil, killing all insect life that they encounter. It is necessary to know just how much will kill the insect and not kill the plant, however. And it is extremely necessary to handle this chemical carefully and as described later. For the amateur gardener it is most useful in destroying cabbage maggot, also an insect that attacks the roots of grape vines, as well as borers that enter fruit trees. It can be bought of druggists or direct from the manufacturers in air-tight cans or drums for about twenty-five cents a pound.

In treating plants for root maggot, a hole should be made three or four inches from the stem of the plant, and running obliquely down below the root. The liquid is poured into this and the hole immediately closed. Press the earth firmly so that the vapours may not escape. One teaspoonful is enough for a small plant; one tablespoonful for a large plant. The earth should not be in too loose a condition, else the fumes will escape, nor in too compact a condition else the vapours set free cannot distribute themselves throughout the ground. It is wise to start this treatment for the maggot as soon as the insect is discovered or he will make such headway that the crop will be lost.

There are injectors made for the special use of carbon bisulphide. A hole could be made with a sharpened stick, the liquid poured in from a teaspoon or tablespoon and the hole immediately closed. A small amount of this liquid poured into a mole's run will be almost sure to finish him, but as moles eat many underground insects, they are rather beneficial than otherwise, unless they make a run under a row of plants, through a flower bed, or ruin a sand-papered lawn.

Carbon bisulphide may be used to kill sucking insects upon plants such as plant lice in this wise: Take a fairly good sized, well-made wooden box.



Use fresh hellebore and dust the powder on the currant bushes or apply it with a bellows

Make an auger hole in the bottom. Place over the hole a wad of cotton large enough to absorb a tablespoonful of liquid. Turn the bottom up and fit a cork into the hole. Now place the box over the plant or vine affected, making sure every part of the plant is inside the box, which should set firmly into the earth. Remove the cork, pour on the cotton two teaspoonfuls of carbon bisulphide, replace the cork and leave the box in position for three-quarters of an hour. I believe this easier than spraying with an insecticide. The odour soon departs, though while it lasts it is terrific and there is no trace of the chemical left. Weevil in grain and other seeds are killed in the same manner, a small amount of carbon bisulphide being poured over the seed, which is in a closed receptacle, the insect being entirely destroyed while the seed is absolutely uninjured.

Kerosene emulsion is made by dissolving one-half pound soap, and adding two gallons kerosene while hot; this must be churned hard until the two ingredients are thoroughly mixed, when it becomes a creamy paste. This must be diluted with twenty to twenty-five parts of water before it is sprayed on the stems and foliage of a plant. You can use one gallon of sour milk in place of the half pound of soap, and dilute in the same proportion before using.

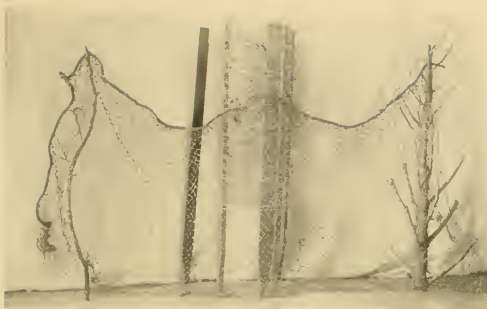
The concentrated solution of the resin-lime wash is made in this way: Five pounds of pulverised resin, one pound of concentrated lye, one pint of fish oil, five gallons of water. The oil, resin and one gallon of hot water should be placed in a kettle and heated until the resin is soft. Then add, very carefully the solution of concentrated lye (directions for making this solution will be found on the can). Next add the rest of the water (four gallons), and boil until a few drops in some cold water produce a clear, amber-coloured mixture. If there are not five gallons of the mixture when boiling is finished, add enough water to make that amount. Take this concentrated stock or solution and to one gallon of it add sixteen gallons of water, three gallons of milk of lime or whitewash, one-quarter pound of Paris green. This mixture should only be made as needed, as after the lime and Paris green are added, it becomes cloudy and gummy, clogging the sprayer.

Copper sulphate is the most practical destroyer of plant diseases known, but if used alone it burns the foliage and therefore it has to be mixed with lime, which also makes it stick, so that every rain does not wash it away. This combination of copper sulphate and lime is the Bordeaux mixture.

If you have a large enough place to justify a barrel-pump you should make your own Bordeaux mixture, but I don't bother with it. I buy it ready mixed and dilute it to various degrees for different kinds of plants. The directions come with the mixture.

Hand picking is the only thing for some of the meanest "critters" of them all. You may sniff and talk haughtily of "scientific methods," but sooner or later your pride will take a fall and you will humbly take your stick and pail of kerosene and make the rounds. Direct contact is unspeakable, and quite unnecessary. Use the pail or fold them gently but firmly in a nearby leaf.

UPLIFTING DEVICES



Vine Uplifters

CHAPTER VII

UPLIFTING DEVICES

LIMA beans provide vast opportunities, in vine, in leaf and in the arrangement of the pendant seed pods, and they are pretty things throughout their development. They are entitled to respect for their palatability, if for no other reason. Don't they taste exceedingly good when they come fresh from your garden?

The regulation support for limas—I mean the running variety, for personally we have no use for the so-called "dwarfs"—is a cedar pole about twelve-feet long. If fortune and locality do not favour this particular wood, hickory poles or even pine sticks may be used. Two feet of its length are driven firmly into the soil and around its base the bean seed is planted. Some gardeners plant the seed first and place the pole after the seeds are up, but this is unwise because the roots are inevitably disturbed. If it is absolutely necessary to place the pole after planting, a crowbar should be used to make a good hole in the centre of the hill in which to put the pole. The seeds have been sown in a large enough circle to admit the introduction of the crowbar without injuring them. Driving the pole after the seeds are planted is not so secure a method as the other, and vines and pole might not be able to stand up under a stiff gale.

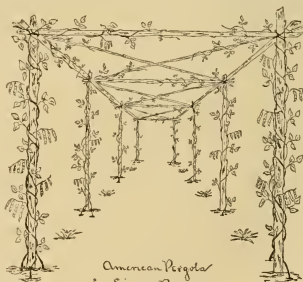
There are various methods of setting the poles, the common way being to put one in each hill in straight rows, the poles being set four feet apart each way. Another is to use three poles, setting them in a triangle and tying the tops together. This we call the "wigwam" method (Fig. 1). Four could be used as well as three. The sun cannot reach and ripen the fruit on the inside of the wigwam, if the poles are placed close together, as well as it can when a single pole is used. The single-pole system has its disadvantages also, for the vine runs so high on a single pole that the best beans, always at the top, are just out of reach. We have a method in our minds with which we intend to experiment.



Fig. 1

It is to be on what we designate the American pergola plan. The poles will be set four feet apart, and six feet out of the ground, with cross-pieces connecting the tops (Fig. 2). The vines will, we feel sure, climb the uprights, run across the top and hang their beans down conveniently within reach. I suppose this is one of the beautiful theories so often encountered on paper, and if any lima beans hear of it they will simply, in a practical and utterly disregarding fashion, wave about in the air after reaching the top of the poles, and sniff at the cross-pieces. However, raffia is inexpensive, handy and quite persuasive on occasions (Fig. 3). Don't you think it a pretty scheme? Something might be planted between the poles of this American pergola, something that is late and does not require too much sun, though I doubt if this vine would grow very dense. I have it—endive, late lettuce, collards or cabbage!

Perhaps you are acquainted with the simple and very inexpensive Indian bean pole. The red man planted his beans around his corn, and in the West, where the cornstalks grow twenty-two feet high, fine



American Pergola
for Lima Beans.

Fig. 2

supports are made without any of the labour so abhorrent to the feathered warrior. I presume this combination is directly responsible for succotash, that truly American dish, and one of the few good things left us by our accidental predecessors.

Cedar is generally used for bean poles, presumably because it is a straight grower and a lasting wood. The kind of pole selected must depend upon the forestry conditions of each particular section. Next year we shall use young locusts, which grow very straight and have side branches, usually trimmed off, but we shall allow them to remain, as they give extra support while the vines are growing.

Peas are usually supported by brush—small branches stuck close together in a single row to form a dense branch hedge, upon one side of which the peas are planted. Many consider it wiser to sow the seed, and have it well up and

cultivated once or twice before the brush is stuck in. There is a question, however, as to whether this method, or that of brushing previous to sowing, is better.

I have spoken of raising peas, beans and tomatoes on a wire fence that will serve to enclose the garden. This fence may be made of any kind of wire, with top and bottom rail, or none, as you choose. I know one fence of this description that is made of one-inch mesh chicken wire, with a board run along the bottom and a moulding along the top. The woodwork is painted



Raffia



Fig. 3. It is handy and persuasive

green, and it is very sightly, even when not covered with vines. One portion is under the shade of a tree, and here morning-glories hold sway,

sowing their seed year after year, causing no trouble, but giving freely of their dainty colouring and exquisite form.

Any style or mesh of wire may be used for peas or beans. If your garden



Planting peas along a brush hedge

lies next the chicken-yard, the six-foot, square mesh wire that encloses the latter could be used as their support, provided of course the chickens have an ample yard with plenty of green elsewhere. If you desire a prettier or more permanent fence, there are innumerable varieties of wire lawn fencing. Our method of supporting is a movable "feast" made of chicken wire, one inch in mesh, nailed to sharpened stakes at intervals of four feet (Fig. 5). Six feet would serve as well, except perhaps for tomatoes. The wire is cut the desired length of the row, and when the fence is completed the stakes are driven firmly into the ground. We find this plan eminently successful and practical. When autumn comes,

or when pea-time is over, this fence is taken away, rolled up tight, bound with string or wire, and stacked in the barn until needed again. Another marked advantage is in the fact that the stakes when driven in do not disturb the plants, as is liable to be the case with brush. We met one difficulty, however. After purchasing four-foot wire and raising it some few inches from the ground, we found that, prune and cut as we would, the tall white Cimitar sugar pea insisted on growing six feet and over, though other peas could be kept fairly within bounds. I think limas could be trained to run on this fence, but they are great twisters, always going from right to left, and they love a straight pole.

Ask your garden-loving friends how they support their tomatoes and each one will suggest a different method. It is amusing to try a different scheme each season—to keep adding to the plans a few of your own ideas, and in this

way tomatoes will remain an ever-interesting subject. Some of the suggestions are worth while. One suggests or insists that the only proper way to support tomatoes, which, strictly speaking, are not vines, is to drive a good, stout, sharpened stake, about four or five feet long, into the soil, plant the tomato vine at its base, tie to it the main stalk where it is large enough, keep all side shoots cut off and never allow the vine to grow taller than the stake. He claims that thus all the strength goes into the fruit, and that there is plenty of light and circulation of air around the plant. There is one serious drawback in my mind to this method—unless the vine is tied very securely the weight of the fruit will break the stem. One of the old-fashioned ways is to use a barrel hoop to which are attached three sharpened sticks. This is placed over the plant, the stakes are driven into the soil, and the plant drawn up through the hoop and allowed to fall over it.

Four stakes with slats connecting them, thus forming an open square, are sometimes used, because barrel hoops are often scarce and somewhat difficult to handle (Fig. 6). Two stakes driven into the earth at either end of the row of tomatoes and joined by long slats, make an open oblong, in reality an extension of the four-stake square. Through this the tomato plants rise and fall over upon the slats, and it serves to keep them fairly well within bounds, but does little else. The

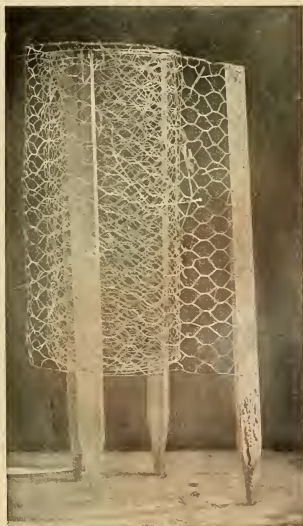


Fig. 5

barrel hoop has been superseded by a later construction for tomato support, made of wrought iron or heavy galvanised wire, three feet high, which can be purchased from gardeners' supply houses for fifteen cents each (Fig. 7).

There are several other supports offered by seedsmen, one being a fan-shaped trellis, made in various heights and sold at the following prices: Eighteen inches high, fifteen cents; twenty-four inches high, twenty-five cents; thirty inches high, twenty-five cents; three and



Fig. 7

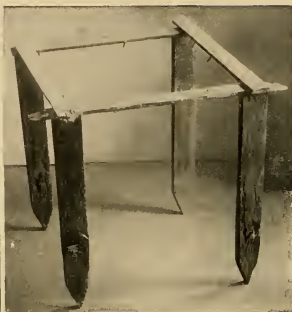


Fig. 6

one-half feet high and twenty-one inches wide at the spread, forty cents. It strikes me that the three and one-half feet is the proper height, but its use would make tomato culture expensive.

Another device is a folding slab trellis of wood, made slimmer the longer it is (Fig. 8). Our grandmothers all had these, with pegs to hang clothes on, and if they were short they were broad, or if long, they were narrow. Unlike the clothes-racks, these opening and closing supports are double, forming two sides of a triangle, while the ground forms the third. Each should be opened to two-thirds the extent of its height to make a strong base; in other words, it should form a triangle, the earth side consider-

ably smaller than the other two. These triangles are placed over the vine, which comes up through the diamond-shaped openings. They can be taken up in the fall, leaves and bits of vine removed, then folded up and stored away. They come in three sizes, and seem rather expensive, costing \$1.50 each, but are supposed to last for ten years, which would reduce the yearly cost to fifteen cents.



Fig. 8. Scissors support or slab trellis

Our tomatoes were grown last year on the portable wire fence, and it was extremely satisfactory. The main stalks were tied to the wire with raffia, the ends of the shoots pushed through the wire, and the plants cut off when they reached the top of the fence. The tomatoes ripened beautifully without further attention, and were easily picked

from either side. The tomato, in its natural state, lies on the ground, being a creeper rather than a climber, but the fruit often rots and ripens unevenly when allowed to remain so. How would it do to give it a lean-to frame to lie on, just above the ground (Fig. 9). This device could be made like a lettuce shade frame, but larger and stronger, the cloth being burlap or sacking. It should be placed with the short end next to the plant. The vine would lie on this frame and be trimmed off when it does more than cover it, so that the fruit could look straight up to the blue heavens and receive all the warmth and sunshine it can get. If the frame were run east and west, or the highest part of it toward the south, I should think lettuce could be grown under it advantageously. Let us try that scheme next year.



Fig. 9. A lean-to rest for tomatoes

MIDSUMMER



Midsummer

CHAPTER VIII

MIDSUMMER



HAT one word always brings to my mind the intense heat, the humming of bees, the silence of birds, the dew on the cobwebs in the early morning.

When this glimpse of the tropics arrives, one feels it is the proper thing to have a rest from gardening, its trials and triumphs, and just to loaf and invite one's soul to the thorough enjoyment of the fruits of spring and early summer's labours. The plants are not resting, or, to speak more correctly, they should not be allowed to rest, even if they desire to do so ever so much. The majority of plants are going through a very trying period. At this time of the year, when the heat is most intense and moisture woefully lacking, we, as guardians of their welfare, must step in and do all in our power to keep them in fine growing condition, not permitting them to loaf nor to become even semi-dormant.

Let us see what plants the garden contains at the beginning of August—beets, beans, summer lettuce, squash, tomatoes, celery, cabbage, carrots, parsnips, salsify, potatoes, corn, melons, onions, leeks and perhaps a half-dozen other things.

Let us take them one by one and see what each needs at this season. The maturing beets require plenty of cultivation, and the last sown are just ready to be somewhat thinned. The surface soil must be kept well broken up and loosened about these youngsters, or their growth will be checked.

Beans, green-pod and wax, are in full bearing, and it certainly is time to make the last sowing. When this batch is up, and starting its second leaves, thin them out to make them four inches apart, work in a little nitrate of soda near their roots but without touching them, in order that the growth may be so marked and vigorous that the hot weather will not affect the blossoms. Work the soil frequently, keep the hoe near the top, so as not to disturb the surface roots, and do this when there is neither rain nor dew on the plant, as moisture is one of the causes of rust, that much dreaded disease of the bean



A spray of late green stringless beans

Lima beans are running well, and must be topped off, when they have reached the limit of their supports, to throw their strength into the pod and bean proper. The season at best is all too short for these plants, and many years and much labour have been expended to produce a lima that will reach

full maturity in our limited duration of semi-tropical weather.

Summer lettuce also needs care now. If you have the Cos varieties, the outer leaves must be drawn up and tied together at the top with raffia, to blanch the inner leaves. If you have a tender or cool-weather variety, it must be protected from the intense heat with screens of cheese-cloth or paper. I intend raising the black-seeded Simpson next summer and protecting it in this manner. I shall take laths to make a rectangle about ten by twenty-four inches, and to this I shall tack some very thin, unbleached muslin or cheese-cloth. Each corner shall be fastened to an upright piece, about eighteen inches long, sharpened at the lower end, so that these ends can readily be pressed into the soil. The screen will cover two heads of lettuce, and it can either be slanted toward the south or put in straight. When its duties are over, it can be easily removed and stacked away for another season.



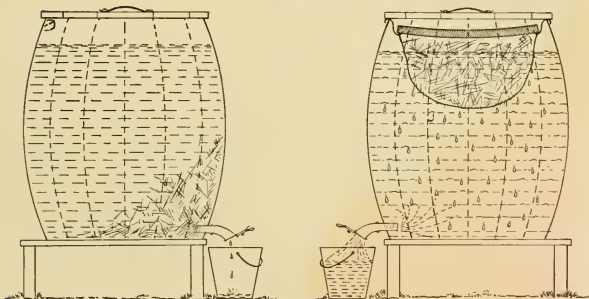
Garden in Midsummer

No doubt some of you, my friends, already possess a stock of these nice little contrivances, and think my advice stale enough, but it is much more fun for me to invent these things than to have some unknown, prosaic individual invent them for me.

Squash, tomatoes and melons must have their runners cut off, or they, too, will forget themselves and make a vast amount more of vine than they will of fruit. They are continually begging for a drink of water at this season,



Nothing to obstruct
the flow



Two Methods of preparing Manure Water

for they are lusty drinkers, and we can satisfy thirst and hunger at the same time if we give them manure-water.

Are you wondering how to make and to keep this splendid plant bracer? I can only tell you how we do it, for I know of no one else who either makes, keeps or uses it. We have an old creosote paint barrel (a whiskey or a kerosene one will do as well), with a molasses spigot, selected because it will not choke up. In the top of the barrel is a bowl made of sacking and arranged as shown above. The sacking is fastened to a heavy wire hoop which has loops that catch over the edge of the barrel. The sack or bag is filled with fresh manure,

How to Make a Vegetable Garden



A cheesecloth screen for lettuce

placed, or I should say, suspended in the barrel from the upper rim. The barrel is then filled with water, the cover put on, and in a short time it is ready for use. The barrel can be filled several times before the manure needs changing, and one bucket of this decoction is worth several of plain water.

The young celery plants that were set out in July will be very grateful, indeed, for the same kind of care, as it is difficult to give celery plants either too much to eat or too much to drink. They are greedy things, but I think they repay us well in the crisp silver coin of their own particular realm.



Bringing in the vegetable-marrow squashes

Carrots, parsnips and salsify need but little care at this time of year, for their large roots are far down below the surface. Cultivation, which means the keeping down of weeds and helping the circulation of air and moisture, is about all they need.

Potatoes need cultivating, unless you have such an early variety that you are taking in your crop at this time. If you are harvesting them, be sure to



Pinching back lima-bean vines to throw the strength into the beans

protect them from the sun. Do your digging on a cloudy day, if you can; it is better for both tubers and digger.

You are surely gathering and enjoying the "middle crop" of corn now, but the later crop needs frequent hoeing to keep it growing fast and strong. Watch for the smut, that uncanny fungus growth, and cut it off as soon as it appears, which it usually does in small knots on the tassel. Burn it, tramp on it, do anything to destroy it. Our little girls can see smut the length of the garden, and are always sure it is "their turn" to stamp on it.

Onions need careful cultivation, and the earth needs to be drawn up about the leeks to blanch them well.



Potatoes must be dug and dried in the shade

Late cabbages were set out in July, in any vacant spot that the garden afforded, so they are dotted around "permiscuous like," unless you have had space enough to give them dignified rows of their own. Midsummer brings with it the pretty little white butterflies whose young mean destruction to the cabbage; but I have already told you how to fight

these pests, so that while you may have some riddled leaves, you should save your crop and secure good, sound heads.

If your garden is supplied with an irrigating system, you are in the seventh heaven, compared with ordinary mortals. Maybe you haven't such a system, but are thinking of installing one, as we are. It would be wicked not to irrigate our garden, when Dame Nature has given us a swift-running, merrily singing brook of clear, cool water, that tumbles and bubbles over a stone fall.



The barrel in which manure water is made

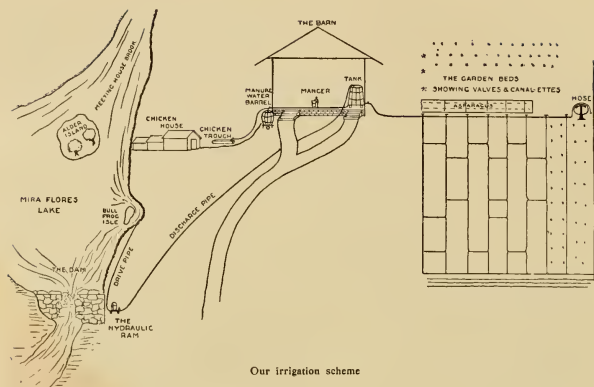
I will give you the plan of our small acre (we refuse to have feet front, feet side, or any other kind of feet). It must be at least a portion of an acre, or one might just as well live in the city, and then you can see how easy it will be for us to irrigate, without the old method of hand pumping, used by those who were here before us.

A small hydraulic ram is to be put in at the foot of the falls, which will



A swift-running, merrily-singing brook

pump the water into a tank on the first floor of the barn. From the tank a pipe, perforated at intervals, will run to the asparagus bed, in which the rows lie north and south. By turning on the supply from the tank, water will flow from the apertures, and as the slope is north, it will naturally follow the hills and rows, the furrows between them furnishing brooklet beds of easy access and most attractive appearance. Then by digging a small gutter with the hoe in any desired direction, the water can be led whither we will. It sounds simple enough, and I hope it may prove a success. As water runs easily down hill, failure is impossible.



Another method of irrigation is to have a main line of pipe run down each side of the garden, with short branches fitted with stopcocks, and short lengths of hose arranged at convenient intervals. By turning the stopcock at any portion of the garden you choose, that section can be watered with ease. There are innumerable other methods, and each garden makes a special demand.

Do not understand that the entire surface of the garden is to be moistened. That would make the ground puddly, and it would bake quickly. A narrow, shallow ditch should be dug on each side of a row of plants, and the water run into these ditches. The water thus immediately reaches the roots of the plants, and as the earth has just been loosened, it soaks down, instead of running away on the surface. The ditches should be watched to see that the water runs their entire length, and is not stopped by lumps or a rise in the land.

It is much wiser to give plenty of water once every few days, than a little each day. The latter method keeps the surface moist, and the roots naturally rise for the moisture, so that they are near the surface and will be injured by the heat of the following day. Give enough water to go deep, or else just enough to wash the leaves. I always think a plant says, Thank you, when it

has had its face and hands washed, and it is much more grateful for that than for nothing at all. Always water at night, for then the moisture has a chance to do its good work before evaporation starts, as it does with the sun's first rays.



At the falls a hydraulic ram will be placed

OCTOBER DAYS



Autumn chores

CHAPTER IX

OCTOBER DAYS

"Come, little leaves, said the wind one day,
Come o'er the meadows with me and play,
Put on your dresses of red and gold,
For summer has gone and the days grow cold."

IT WOULD really seem that gardening is entirely over and Nature slowly, but surely, sinking softly into her winter's sleep. So she is, but there are many things in our modest garden plot still very wide awake, and we must make hay while the sun yet shines in the glorious Indian Summer days. It hardly seems possible that the garden can be so green at this time of the year, but we notice few really bare spaces. The cabbages make a brave show, hiding several vacant spots, while the cauliflowers, their cousins, are scarcely to be distinguished from them at a little distance, excepting those that have had their leaves pinned or tied together, like an old-fashioned sunbonnet, to afford protection from the sun and from other unwelcome possibilities, as well as to blanch the heads of dainty flowerets. Georgia collards are gorgeous also at this season, and the tropical leaf mass of the Spanish

cardoon throws a silvery tint all about its abode. Parsnips are as green as green can be, though they have lost their larger, outer leaves. Celery peeps from the brown hillocks which cause the garden to resemble man's handiwork during the age of mound builders. A few late heads of lettuce add a light green touch, and endives are tied up in queer balls to make them white and pure of heart, as well as palatable. If there are any berry vines in your garden, particularly blackberry and strawberry, you are sure to have the most beautiful touches of scarlet and crimson.

The early part of this month is the beginning of clearing-up time. Beans, limas, tomatoes, etc., have been touched by the frost, so that the plants must be pulled out and thrown on the compost heap, into the manure pit or burned, as it is extremely unpleasant to have the remains of plants lying around, exhibiting blighted evidences of a former beautiful existence to the public in general, the gardener in particular.

What shall be done with these remnants of summer's bounty? Do not waste them, anyway. Bean and pea vines should always go into the compost heap and so should beet tops, carrot tops, melon vines, etc. Corn should be burned, as it seems too large and coarse for the compost heap, and asparagus also must be cut partly and burned. There is a small gray bug that feeds on the latter plant, appearing late in the season to attack the tender, green foliage. If the tops are cut off and burned, with their unwelcome visitors, before they have a chance to go below into the earth to make havoc among the roots, next season's number of the enemy is certainly lessened, if they are not entirely destroyed. Asparagus must have its autumn meal now, as well as its pruning. Its favourite dish is salt, therefore the earth should be thoroughly loosened around the roots and salt sprinkled on until the ground is white. Then cover up warm and snug for the winter with a heavy coat of well-rotted manure. Salt is scattered on the bed in spring by many growers, some of them feeding it even monthly.

Rhubarb—that greedy fellow—will take all the fertiliser you can give him. If you want fine, large, succulent leaf stems next spring, give him a foot or more of well-rotted manure with a good proportion of chicken manure. The latter is one of the richest fertilisers the gardener possesses, but too often it is entirely wasted. Rhubarb in particular seems to require it, and amply repays its free use. In this connection, it is interesting to recall the growth in our garden one year. Two-thirds of its length had been dug over and spread with stable manure before the winter shut down hard. It happened

that the earth was frozen from the first frost until late in the spring, and tests showed that the frost had penetrated to a depth of four feet, so that there was no chance to prepare the remaining third. The sweepings from the chicken-house were carried to this section and dumped upon it in piles. When the spring opened, these were spread out and the entire garden then treated alike—first sown with wood-ashes and bone-meal, then forked over. There was a line right across the garden most clearly indicating where that hen manure had ceased. The corn and peas were taller, the tomatoes more luxuriant and larger, and the collards, cabbages and broccoli much finer where the hen-house sweepings had nourished the plants than elsewhere.

After a hard frost the feathery top of the asparagus should be cut down entirely and burned at once, while the rhubarb's frosted leaves are added to the compost heap. Both asparagus and rhubarb have their roots deep down and start fresh from them each season, so that they appear very early.



Celery-pit opened to take out a fresh supply



Hay-lined earth-pit almost finished

Celery has been boarded up, to blanch it, or it has been banked with earth, a little each week, until only the tops of the stalks protrude, but late in the month it must be protected for the winter. The methods are numerous, and so are the advocates for each particular one. The celery may be taken up, packed closely in boxes of sand, and stored in the root cellar; or boards may

be placed each side of the plants, and earth thrown up against them almost to the top. Then the entire arrangement is covered with leaves, straw, branches or hay, to keep out the frost, and earth is piled on as the winter

advances. If the celery has been banked with earth, the whole mound may be covered deeper with straw or hay, and further earth added if necessary; or the plants may be taken up, placed close together in a trench, and covered over with earth. Be sure to grasp the stalks firmly, when banking them up, in order that the crowns may be well protected from loose earth falling in upon them. The opening should be planned to face the south, and the mound entirely covered with straw litter, old mats, old carpets, matting, or whatever material can be most easily secured.

Cabbages can be taken out and stored away in the root cellar, or they may be buried. Dig a trench for them about one foot deep, and put the cabbages in up-side down, cover with earth, then hay, and more earth later. If you live near salt water and can procure hay from the salt meadows, you have an ideal covering. We enjoy that as well as many other things which come to us, through living in close proximity to Old Ocean. Salt hay as protection, will go farther and serve better than the ordinary variety.

Carrots and Hamburg (or turnip-rooted) parsley must be taken up, packed in boxes of sand and stored away in a dark place where they will not freeze. Parsnips may be let severely alone, as the frost greatly improves them and they certainly are delicious when you have to break hard ground to get them, even though at times it seems as if blasting would be necessary.

Kale, cardoon, dandelion and corn salad all need a light winter overcoat of straw or hay. It should be placed around the roots of the larger plants and entirely cover the smaller ones. Welsh onions and winter spinach, that are not sown until September, are protected in the same manner.

Cauliflower and broccoli must all be cut before a heavy frost, but if you wish to keep them as long as possible in the open, they can be protected each night with a sheet or with newspapers. The covering should be removed as soon as the thermometer registers above freezing point during the day.

Late potatoes must be dug now, dried thoroughly then placed in barrels and boxes to be stored away.

When everything has been laid by for the winter, the garden should be plowed or forked up and spread with manure. It is then ready to have the snow lay a coverlid over its head. You know that snow is the greatest protection plant life can have during the winter months. If the ground is slightly frozen and then covered with deep snow which lasts all winter, the frost cannot penetrate further into the soil. If, however, there is severe weather without snow, the frost penetrates to a great depth, reaching and freezing the roots

where the sap is stored ready to go to work again the following spring. In such seasons plants are winter-killed in great numbers. Manure throws out warmth, and therefore it is the ideal artificial protection for plant roots. I remember noticing our rose bed one snowy day last winter. The snow came down heavily in the night, but the storm had passed on by morning. Toward noon there was a melted circle around each rosebush, which might lead one to think the plant itself emitted heat. It was not the manure that did it, for the whole bed was covered with manure, and the only melted spots were immediately around each bush. It might be argued that the snow melting on the branches had trickled down and melted the snow at the roots of each plant, but the tiny stalks that were left after pruning could not hold enough snow to melt such a large circle. Will not some one solve the riddle?

Now comes that large, comprehensive, necessary and economical subject, the storage of roots and winter greens. There are various methods, each with its good points, and each with one or more features particularly applicable to your particular conditions. Several general rules must be followed, though there are various ways of carrying these rules into effect.

Roots, such as potatoes, carrots, turnips, and beets, as well as greens, celery, endives, etc., must be kept from frost and from light, must have plenty of ventilation and a temperature as even as possible. The old-fashioned method was to keep them in what was called an "outside cellar." This was a pit dug about four feet below the surface, over which was placed a gable roof made of boards. As cold weather approached, earth, sods and straw were thrown over the roof as extra protection. Ventilation was supplied by a hole in the roof at the far end, which was covered with sacking. The near end, next to the house, was furnished with an entrance door and good ventilation was supplied on warm days by leaving it open and taking the sacking off the roof. These pits had such low head room that one could not stand upright in them, but they must have served their purpose, for in the olden days people were absolutely dependent on their own stored food for winter use. The vegetables were either packed in barrels or boxes, or dumped on the floor, which was covered with straw. If these houses were to be permanent, the wall was made of brick or stone, and the roof boards nailed on; otherwise the roof boards were simply "tacked" on and used for other purposes the ensuing summer. I should think a good model for a modern root-house would have double walls made of concrete, with an air chamber between the two walls. This would be a pretty building on a farm and a picturesque



In the garden there is still much that is green

addition to the landscape, if it had a nicely thatched roof, or one made of cornstalks.

Another method is the digging of a pit six feet wide, four feet deep and as long as required. Vegetables are packed in here the width of the pit and four feet long, forming a square to the earth level. Six inches or a foot of soil is then placed beside these vegetables, another similar block is made, and the process repeated to the limits of the pit. The whole is then covered loosely with boards, which rest on the ground level. These are in turn covered with straw or salt hay and, as the temperature decreases, earth is piled on top. When the pit is opened, as it should be at the southern end or side, one block of vegetables can be removed without disturbing the next. One extremely important thing about all pits is their underdrainage. In no case should water be allowed to remain in the bottom of the pit, as it would cause rot, rust and mould. Select a well-drained spot, if possible, or see to it that artificial drainage is supplied.

A good place for a root cellar is under a barn. Excavations of the

desired dimensions should be made, the walls bricked up to the barn floor, a ventilator put into the wall and double doors at the entrance with air space between. A hole in the shape of a star or a crescent may be made in these doors to admit the air which is carried off through the ventilator. Roots and greens should never be stored in a cellar where there is either too much heat or too much dampness. A cellar containing a furnace is a very poor place, as the heat will wither the vegetables or start their growth out of season.

The Scotch method of storage is to have a trench six feet wide and one foot deep, the earth being thrown at either side. The vegetables are then put in and piled six feet high in the centre, with the sides sloping to the ground. This forms an equilateral triangle six feet on a side, and it is thatched over with straw, four inches thick. When hard freezing weather comes, earth is thrown on it to the depth of a foot. Ventilation is supplied by drain pipes in the top of this pile of edibles, a few feet apart.

The housekeeper prefers to have the provender nearer home, as it is a man's work to open an out-of-door pit, unless it be one of the old-fashioned kind, with an entrance door. If you have an unheated cellar with good



The garden and its vegetable-pits lie deep under the snow

ventilation, no more need be said; but even if you have not, you can perhaps partition off a portion of the cellar to make store room for your winter supplies. The part selected should be a northwest or a northeast corner, as these are the coldest, and it should have a window in it, if possible. Double or vestibuled doors would be the kind of entrance, as the outer door may be opened and shut before the inner one is unfastened, thus preventing the heated air of the cellar reaching the vegetables. The window should be darkened and a ventilator put through one pane of glass, the kind used in the ventilating shafts of high buildings and offices. You have no doubt seen these miniature windmills whose rotations are caused by the escaping hot air.

My root cellar is simply ideal. It was made by loving hands and much hard work during the evening hours. If you have one anything like it, you will know how much I enjoy and appreciate mine. Our house is one of the dear, old-fashioned variety that has been "tacked onto" from time to time. It is in three sections, and the cellar is under one portion only, while the adjoining section has but three feet of excavation under it. To make the root cellar, a section of stone wall wide enough for a door was torn down, and excavation was started in the part adjoining the cellar. A room was dug out there, about ten feet square on the floor, and twelve feet square on the top of the earth. A dear little boulder weighing two tons lay in the middle of this room, but, fortunately, when loosened it rolled into the cellar with very little help. It was probably deposited by a glacier that passed this way some eons ago, for you must know, our home is on that fascinating bit of land tacked on to New York State called Long Island, and our home plot was in all probability the bed of a river in those long ago days. When this dear little souvenir comes out of the cellar, it will make a fine seat under the apple tree, for it is water worn to remarkable smoothness.

But to go back to the cellar. When the excavating was finished, the earth walls were covered with a heavy coat of cement, and the three-foot space between the top of them and the floor above was bricked in solid. Paroid roofing, an impenetrable variety much used on chicken-houses and barns, was then nailed to the upper beams in order to keep the cold air from the floor above, which happens to be that of the dining-room. The walls were given a good coat of whitewash, in which some salt had been mixed to harden it.

The ventilating system is as clever as any part of the plan. A metal leader pipe, the largest made, which measures eight inches in diameter, was

purchased, and painted with Prince's metallic to prevent rust. This pipe was put through the north wall of the house and over the pipe end was placed a heavy half-inch meshed galvanised wire, to keep out inquiring and hungry vermin. You must see that the cellar's location is not ideal, facing directly south and placed under the middle of the house. The pipe runs under the floor to the root cellar, where it drops down to its floor. On the opposite side and going out at the ceiling is a corresponding pipe which leads out of the southern wall, and this opening is also covered with wire. You understand the principle? If cold air falls, it comes from the north; if hot air rises, it is drawn out at the south. The ventilation is simply perfect. I know you are wondering what happens when the thermometer falls to zero and all that cold air is rushing down the leader pipe. There is a damper in each one, just like the damper in your kitchen stove, and this can be turned off whenever it is necessary. The best temperature is about 42 degrees Fahrenheit, and if that can be maintained, it is just about the proper thing, as it insures dormancy.

A few shelves are put up where preserves, pickles, jellies, flower roots, and bulbs can be either stored until summer or started into growth for the window garden. An electric light brings us to the doors, which are double and arranged as described previously. The switch of the electric light is in the main cellar, so one need not go into the dark and come out in the dark. Now, do you envy me my new possession? I have just enough German blood in my veins to like to see that cellar full of preserves, jellies, and pickles made by my own hands, and, last but not least, stocked with vegetables raised in our own garden.



A peep into the root cellar

OLD FRIENDS AND NEW ACQUAINTANCES



Old friends: Beans



New acquaintances: Martynias

CHAPTER X

OLD FRIENDS AND NEW ACQUAINTANCES



ONE meets both of them as often in the succulent Vegetable Tribe as in the dainty, ethereal Flower Kingdom. It is just as interesting to become acquainted with a Japanese radish as with a new carnation, the only difference being that the pleasure is shared with another sense. It is just as pleasing to the palate to taste Pe-tsai, as it is for the nose to receive a new impression through the odour of a new rose; although the pleasure may be overbalanced one way or the other according as either sense is the more highly developed in a certain individual. With us vegetables could never take the place of flowers, but we know there are a goodly number of people whose opinion would be quite the reverse.

One summer we had a European helping with the garden work. We spoke to him one evening in regard to some autumn work among the strawberries. The bed lies at the end of the garden nearest the house, and it was bordered that year by a great wide row of eschscholtzias (California poppies), still in gorgeous array of striking yellows and orange.

"Yes," said the foreigner, walking toward the bed and planting both feet upon the border. "I think it would be wise to lift this row and run the bed back farther. That's the way we 'ad h'of doing at 'ome. These vines down 'ere," he continued, as he walked the full length of the eschscholtzia border, practically obliterating it, "need to 'ave their runners cut h'off h'gain. I never saw vines run the way these 'ave; h'tit must 'ave been that bone-meal."

This monologue simply floated through our brains, for we just stood

spellbound in wonder that a man could possibly crush those beautiful blossoms under his feet, and not know it. We did not tell him, it would have been too unkind, and he does not know it to this day. We had to part with his services, however, for there was not a flower safe where he was at work. An ancient bitter-sweet, a glorious vine nearly covering the back fence, was poison ivy to him, poppies were weeds, and eschscholtzias invisible.

Don't, I beg of you, slip into a garden rut, and therein contentedly continue to travel. Make at least one new acquaintance each year. By a very modest investment of coin you can secure a package of flower seed, and a package of vegetable seed, in varieties yet untried. As a result of this ten or fifteen cents' outlay you have considerably broadened your garden horizon, and what matters it whether you care to continue the acquaintance and grow to be intimate or to part forever after a brief companionship? Sometimes you will make warm friends, and wonder how in the world you ever got on without them.

There are two ways of adding to your list. One is to test a new-named variety of any given vegetable; the other, to grow an entire stranger, perhaps



A delightful new acquaintance from Japan: the Sakurajima radish



The Pe-tsai, another newcomer from Mikadoland. At the left is a blossom, at the right a matured head



Borage, one of our flower vegetables

a foreigner. Suppose, for instance, you have always grown evergreen corn, tritely saying, "That is good enough for me." Then this year try Egyptian, Golden Bantam, Shoe Peg, Country Gentleman, or any other of the numerous varieties offered by seedsmen. This will certainly serve one of two purposes: it will either give you a new friend, or make you still better satisfied with your old standby.

I am going to give you a list of the multitude of named varieties I have found, using sometimes but one catalogue, never more than



Golden Bantam corn, early and sweet



Tall white Cimitar sugar peas—"A thing of beauty" and
"a joy forever"

three. It shows at a glance the vast number of opportunities for change in the garden, and makes one feel keenly that it will be many years before the varieties are exhausted or even a superficial study completed of their present widely differing peculiarities. As each year develops something either entirely new or a little nearer to perfection in its beauty of form, earliness, or flavour, there are these improvements to look forward to, with keen pleasure or solemn determination, as befits the personality.

With such men as Mr. Bur-

bank devoting time, energy, and knowledge to the production of something different, we need not have any fear of coming to the end of garden novel-
ties. Lettuce is offered under at least 55 different names, chicory 3, cress 4,



Trianon lettuce, a new acquaintance

cardoon 2, dandelion 4, celery 24, cabbage 37, mustard 4, endive 5, corn salad 3, rhubarb, 3, asparagus 8, parsley 7, kale 7, beets 23, spinach 10, leeks 10, radish 50, carrots 18, parsnip 3, salsify 4, onions 25, potatoes 18, turnips 21, tomatoes 47, cantaloupes 26, watermelons 24, cucumbers 21, peas 36, bush beans 25, pole beans 8, squash 20, pumpkins 7, eggplant 6, pepper 19, corn 33, strawberries 24, blackberries 6, raspberries 8, currants 4, and gooseberries 3. To this list each of us can undoubtedly add many varieties of purely local fame, but nevertheless of much value.

Do not for one minute consider this a complete list from all the catalogues

I could obtain. My object in presenting it is merely to call your attention to some of the many varieties, and to show how very easy it is to make new friends as well as to recover old ones, long since forgotten, which have gained new names or have had such forced upon them. What a host there is waiting for an introduction to you and your garden! I could not tell you under which name the best of any variety is known, for my experience covers only the few which have graced our garden by their presence. Fifty-five kinds of lettuce! It would take a long time to test and become thoroughly acquainted with the good and bad points of each one. There must be some as much alike as twins I know, whose father cannot tell them apart, and who skilfully turn this fact to their personal advantage, for if one has been naughty, she is the other one; if good, she is herself.

The other way to make new acquaintances is to grow an entire stranger; then if you care for it, well and good; if not, what is the loss? A few cents in coin of the realm, and some outdoor labour; but the gain counterbalances, for although you have not secured a valued acquisition, your garden horizon

has been broadened. Suppose, on the other hand, the entire family goes into raptures over your new find. Wasn't it well worth while?

If the housewife is also the gardener, she is sure to put some new life into her garden, for what is more satisfactory than being able to offer the family an entirely new dish. If the masculine portion of the family has the garden in charge, it is his bounden duty to give the housewife at least one new vegetable each year. Now housewife, don't object and say you don't know how to cook that weird thing. Just use your common sense and the good judgment you of course possess, and if the dish is palatable and novel you will revel in it when guests arrive. If it is not good, you may be sure the gardener will never bring it to the house again.

The human physique is run on exactly the same plan as a piece of machinery. We must have fuel to burn in order to keep up steam, or we cannot work. Our food must be the right kind, both chemically and physically, just as surely as that which a power-producer requires in the right kind of oil and fuel in order to evolve its highest efficiency. Nine-tenths of us can, and do, perform work on an incomplete ration, but every modern housewife and mother knows it is a part of her duty to supply all the constituents needed by her family to enable them to become strong, vigorous and healthy human beings.

There are two decided opinions in regard to vegetables as a diet, one being that they are the only proper and legitimate food for man, and that meat or fish is absolutely unnecessary, even harmful. The other belief is that a well-balanced ration must contain both meat and vegetables to supply the qualities necessary to the human physique in the upbuilding and sustaining of its strength.

In a very brief way, let us look at the subject. The body makes use of chemicals in the following manner: Sugar and starch produce fat; albuminoids, muscle, flesh and tissue; mineral matter, bone and teeth; nitrogen, blood and tissue. I do not mean by this that sugar and starch make fat alone,



Black-seeded Simpson lettuce. An old friend

or that nitrogen makes blood and tissue alone, but that these items contained in the food we eat have a marked effect on these sections of the physique. In the chapters on vegetables and small fruits I shall endeavour to give



The exquisite leaves of the striped and variegated kale

you the predominating elements or compounds of each variety, so that you may know, when raising them, just what part of the system they will best nourish. Again, if the housewife is the gardener, she will arrange that too large a crop is not raised of vegetables possessing little food value, and that those predominate which contain a good proportion of nutriment. I have expressed this idea, hoping that the masculine gardener may take the hint, and give to the housewife nourishing foods, as she is obliged to use what he provides, even though it be against her better judgment. In combining vegetables for the table, select two or more that are complementary, that is, in themselves a good mixture of varied nourishment, instead of having the predominating element the same in each. For instance, a vegetable which contains a large proportion of starch should be used with one that contains a large proportion of nitrogen, e. g., potatoes and peas.

A somewhat new theory is advanced in regard to the medicinal and nourishing quality of vegetables varying according to the composition of the soil in which they are grown. For instance, a vegetable raised in land where iron abounds is said to contain more of that element than the same raised where iron exists in small quantities, or is entirely lacking. It is proposed to raise vegetables with this specific point in view, and to give people needing special chemical constituents vegetables in which these items abound, because

the plants have been fed upon them. Whether vegetables will absorb more than just so much iron, or other ingredient, when it exists in abundance, has not yet been satisfactorily demonstrated. However, the subject opens up an interesting and extended vista of experimental work.

Certain vegetables are known to have a very marked effect on the human system. Lettuce is recommended to people troubled with insomnia; celery to folks with nerves unstrung; asparagus affects the kidneys, and is utterly forbidden to certain people. Onions are stimulating to the intestines; dandelions are good for the liver, and there is a positive craving for them in the spring. So on through the whole vegetable family plants are found acting apparently with particular energy upon certain portions of the human structure.

I must give you a few of the experiences with our new acquaintances in the vegetable kingdom for one summer, for we were not so conservative as to make one or two new friends only, but contrariwise went into it head over heels, practically as well as metaphorically. The raising and maturing



Chervil, a dainty new garnish



The fine foliage of the fennel

was my portion of the labour, the picturing belonged to the Man from Out West. When the seeds arrived from the warehouses, and there seemed an inordinate number of them, I threw up both hands in despair. The Texan looked them over and remarked:

"Do I have to eat some of all those things?"

"Yes, dear, you promised."

"Do you think I will pull through O. K. and come out alive?"

I paused a moment, and then a brilliant thought struck me.

"We can compromise. If they look too dreadful to take chances on, we shall each take a very small taste at the same time, so that if we have to die, we can die together."

He seemed slightly comforted, but still I noticed a worried look upon his countenance. He has always called salads "grass" or "hay" and left them to the "cattle critters." He does not go into raptures over greens, nor queer foreign things, nor others that are to him nothing in the world but weeds; hence such names as orach, broccoli, Sakurajima radish, scolymus, scorzonera,

pe-tsai, etc., did not appeal to him strongly. They certainly sounded deadly enough, and several did not promise great things even to me.

Several days afterward, my bosom swelling with pride, I ushered him into the garden, which was one mass of tiny sticks, each nicely labeled and numbered. I could see in my mind's eye many delicious vegetables, ready to serve upon our humble board; for in those packages of seeds had been sixty-eight new acquaintances.

"Are these graves? What has happened? Cyclone, earthquake or 'shootin'-irons'? Who has been killed? Looks like a Lilliputian cemetery," he said.

"Well, that is a nice way to talk about strangers we are harbouring within our gates."

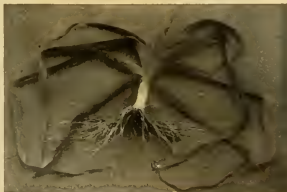
"I beg your pardon, but they almost took my breath away. You don't expect them all to grow, do you? Some of these things come from the ends of the earth; they will never thrive in the job-lot climate peculiar to the United States."

"I shall be perfectly satisfied if twelve out of the sixty-eight grow," said I; "and more than satisfied if half of them are good to eat."

With this understanding, peace of mind was restored, for he, I know, had visions of "grocery vegetables" on our own table all summer, if these freaks occupied the entire garden, as they did at that time.

Can you imagine my consternation when the seedlings began to appear, one, two, even four in a day, until there were sixty-four young things I knew nothing whatever about, all demanding attention at once? I think I called myself a fool, but back out I would not—no, not if I never left the garden again, day or night, alive or dead, and the latter is pretty nearly what happened.

Then when it was all over, the crop gathered, tested, eaten, stored or protected for the winter, I looked back upon my summer's constant vigil with composure, and I would not now for a good deal give up the very interesting experience. We have made some delightful new friends who will always find a snug corner in our garden, but we simply



The American Flag leek

refuse to keep up even a speaking acquaintance with others. There is just a baker's dozen which we care to raise again, and among these may be mentioned New Zealand and prickly spinach, scorzonera, pe-tsai, Sakurajima radish, endive, and sugar peas, but there are plenty of untried friends left in the catalogue for next year.

Old friends one cannot lose, they are precious, but new and improved strains must always be given a chance to "show what stuff they are made of," as well as an opportunity to be fairly weighed in the balance. Then individual like or dislike must decide whether or not they are found wanting.



New Zealand spinach, bearing its minute blossoms in the leaf joints



"Old friends one cannot lose"



The heart of a big cardoon—well worth growing if only for its beauty



Swiss chard, the fleshy white midrib of which is used like asparagus

LEAVES WE EAT



As varied in form as in flavour

CHAPTER XI

LEAVES WE EAT



I WONDER how many of us are conscious of the particular portion of a plant we are enjoying when we eat it. If we stop a moment to think, of course we know that all salads and greens are leaves, or portions of leaves. I am now going to give a list of various leaves, as I know them through study of their growth and use, together with directions for sowing the seed, taking care of the plants, gathering and preparing them for the table.

I think I owe you here an explanation of the numbers that appear in the photographs. We had so many varieties of vegetables in our garden last summer that it became necessary to give each a number as well as a name, and their life history was therefore recorded in black and white, as well as by the camera.

The cooking of vegetables is quite as important as the raising of them. The gardener may bring to the house the most perfect specimens of his art, and the cook may, or may not, contribute the perfection of her art. In the latter case, one might just as well have old, shriveled, wilted vegetables as those freshly picked.

The leaves that may be cooked are known as "greens"—cabbage, collards,

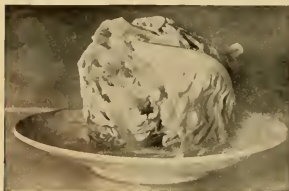
dandelions, spinach, etc. They contain much water, which is released in the form of steam during the cooking process. The general rule is for the leaves to be thoroughly washed, packed into a kettle, covered tightly and boiled gently until tender. Some cooks add a little water when placing them over the fire, but others heat gently to draw the juices out of the leaves. In either case, the leaves should be cooked only until tender, and should be a good green, not of a washed-out, brownish tinge. A small amount of salt may or may not be added before cooking. Authorities differ on this point, but I have used both methods and prefer to add salt after the vegetable is cooked.

Cabbage should be boiled in salted water of 212 degrees heat, and it should be kept gently boiling until just tender. Be mindful of this point,

for overcooked cabbage becomes soggy and pink. Boiling is by no means the only way to cook leaves. I have tried to suggest several methods in the preparation of each vegetable, so that we housekeepers may not get into a "cooking rut."

If leaves come to you sadly wilted, place them in a pan of cold water, for they are nothing more or less than a handful of plants

asking for a drink, as would a bunch of faded roses, though some people seem to think them an entirely different tribe, and regard them as beyond redemption once they become wilted.



The enfolding leaves of the cabbage lettuce

LETTUCE

The reason why I select salads first and not some other variety of vegetable, is because it is the first one thought of in the spring. The first seed I go for, when gardening time comes, is lettuce. though your "first vegetable" may be radically different.

When one goes over a catalogue to select lettuce seed, the number of varieties is perfectly bewildering, and unless you know them in a general way, you are absolutely at sea. Lettuce may be divided into two classes—one that forms a head like a cabbage with the leaves curled tight about the centre, which is known as the cabbage lettuce; and the other, the open or Cos lettuce, sometimes called curled. It is safe to say there are fifty or more

named varieties of lettuce, so that if it be your first attempt with it and you have a friend who recommends a certain variety or varieties, by all means try them. I think the general favourite for heading is the Boston Market, or Big Boston; the favourite curly variety is Black-seeded Simpson, and one of the named Cos varieties for midsummer. Your catalogues will tell you the season for planting, and each seedsman has a special pet variety, "better than any other ever before offered."

If you have a coldframe, and want very early lettuce, sow the seed in drills, two inches apart, and cover slightly, firming the soil well over them. If the coldframe is well protected, sow the seed in March, thin them out to stand one inch apart when the second leaves appear, and when they begin to crowd each other, take them up and set them six inches apart each way. If you have two frames, the seedlings may be transferred from one to the other, but if you have only one, two rows of seed, perhaps even one, will give you enough seedlings to fill the bed. Plant the seed at the right end of the cold-frame, with the rows running from front to back. Start the setting out at the left side, working over to the right, and by the time you reach these right-hand rows all the seedlings will have been taken out. Do this transplanting on a warm day, and water the plantlets well when newly set.

If you have no frame, and still want early lettuce, start the seeds in a "flat," that is, a shallow box with sand in the bottom and loam on top, in which holes must have been made for drainage. Place the flat in a moderately warm window, and thin and transplant after the same manner as in using a frame. The seeds may also be sown in eggshells, Charlotte-russe cases, berry baskets, as I have mentioned elsewhere, or in any other receptacle that suggests itself to you. If you are very much interested in the cultivation of early lettuce, there is a most instructive Bulletin (No. 208) issued by the New York Agricultural Experiment Station. Here are some of the most striking facts contained therein: In experimenting with lettuce on sandy and clay loams, with or without manure and chemical fertilisers, it has been clearly proved that manure is extremely necessary, and that the amount needed on clay soil exceeds that required on sandy soil. Again, "the soils which received manure only at the rate of one-third their bulk, and which were packed firmly into boxes, gave a better yield than any other portions, better even than those which received as much or more manure, combined with commercial fertilisers."

It would seem wise from this to make the bed which is to receive lettuce

very rich in manure, leaving out both bone-meal and wood-ashes or other fertilising material, and pressing the earth down firmly before the seed is sown. I shall take a great deal of pleasure in trying this experiment for myself next summer, as I was fully convinced that lettuce needed nitrate of soda. I think I shall have two beds, one where the soil receives manure only, the other where it gets manure, bone-meal and wood-ashes; and the seedlings of the latter shall also receive nitrate of soda. Then I can judge which is the



Trianon Cos lettuce in blossom

best method to follow for our garden spot, that being the only way one can secure the data necessary to a full measure of success from his own particular bailiwick. The Bulletin also states that nitrate of soda gave the best results on clay loam, while sulphate of ammonia gave best results on sandy loam, when these chemical fertilisers were used without manure.

If the seed is to be planted in the garden, do so as soon as the soil can be made fine and mellow, no matter how cold it is, for this plant does not object seriously. If you wish to set the plants out to head, or to grow into large, individual plants, I would suggest that the seed should not be sown too thick, but merely enough put in

to secure a good standing. Thin out, as directed for coldframe culture, to one inch, and then, if you wish to transplant all the seedlings, do so when they crowd one another. If, however, you like to eat young lettuce leaves (and we think them away ahead of the mature leaf), thin out enough to leave only stocky plants about ten or twelve inches apart and take those "thinned" plants to the house to provide the very daintiest salad nature can afford. If you like this young lettuce better than heads, make a bed instead of a drill for the seeds, and sow the bed as you would sow grass seed. A little nitrate of soda worked into the soil near the

roots of "set-out" plants will, we find, greatly increase their growth and crispness.

The midsummer varieties are extremely nice to have. They are called in the catalogues Cos, Romaine, and sometimes celery lettuce, from the fact that the outer leaves must be drawn up and tied at the top to blanch the hearts. This is a misnomer, however, for all unheading varieties belong to the Cos type. We had two Cos varieties in our garden last summer, the Express and Trianon. The former was sown in April and was ready for the table on July 4th; the latter, planted in May, was ready the end of July. They have long, narrow, handsome green leaves which are not so bitter as many varieties are. They stood the heat well.



Express Cos lettuce at the eating stage



Seedling of Express Cos lettuce

I do not think there is anything new I can tell you about preparing lettuce for the table. It is almost a universal dish, and becoming more and more popular every year. Anything that makes human beings eat oil is of great value, for we seldom eat fat with our meat nowadays, so that the system lacks grease. Our bodies correspond to machinery, and the joints need oiling occasionally. French and mayonnaise dressings both provide this oil, and the latter contains egg yolk, which is an added nutriment. There is not enough care taken of lettuce before it reaches the table. If it comes from your own garden, it should be picked in the early morning, while crisp, and before the sun has had

a chance to wilt it. It should then be placed with its stem in water in a cool, dark place, preferably the cellar. An hour or more before it is served the leaves should be pulled apart, washed thoroughly in cold water, and the end of the midrib broken off, if it is too fleshy, as that is the bitter part. The leaves should be shaken well to remove as much of the water as possible, then placed upon a square piece of mosquito netting, the corners gathered up in the hand, and the whole shaken or tossed for a moment before laying it directly on the ice. The crispness and coolness of this dish on a hot summer evening cannot be equaled, I think.

Lettuce soup is very palatable to those who care for milk soups. It is made in the following manner: Pull two heads of lettuce to pieces, wash thoroughly, place in a kettle, and cook for fifteen minutes, stirring constantly. Drain the lettuce, chop it fine and put it back into one-half pint (or more if there be so much) of the water drawn from the leaves by cooking. Add a



Giant Iceberg lettuce withstands heat, but must be tied for blanching

tablespoonful of onion juice and one quart of milk. Now rub one tablespoonful of butter with two of flour until smooth, moisten with cold milk and pour into the mixture. Cook this compound in a double boiler, which, for the benefit of the masculine mind, I may remark is a cooking utensil which has two compartments, one within the other; the lower containing boiling water, the upper the food to be cooked. This utensil should always be used where milk is a portion of the dish in preparation, for milk scorches very easily when brought in direct contact with the fire, but it never does when cooked over steam. Stir the lettuce mixture continuously until it is thick and creamy.

Add salt and pepper to taste, and it is ready to serve.

Lettuce is the mainspring of nine-tenths of the salads. Of course, you can have chicken and lobster salads without lettuce, but they are without a

backbone. The plant has but few enemies. The black flea-beetle is one which can be upset by dusting with fine coal-ashes; spraying with Bordeaux,



The large end of the midrib should always be broken from the lettuce before serving

or using Paris green, mixed with ten to twenty pounds of flour, air slacked lime or ashes.

Here are a few general facts in regard to lettuce that may be of interest. It is a native of India, and is an annual, with yellow flowers. The seeds are small, flat, shiny, either black or white, occasionally yellow or brownish. It can be sown from February to August, matures, or rather is fit for eating, in from seventy-five to one hundred days.

The food value lies in its greenness and refreshing qualities. To some it is a sleep-producer, opium being present in very small quantities.

CRESS

Next to lettuce, I think I prefer cress. There are several varieties of this plant, but none equal the true water-cress. We had a very interesting time raising this vegetable last summer, for we tried it both in the garden and beside the brook. There were four varieties; true-water, broad-leaved winter, American, and extra-curled.

They were all planted the same day in both places, April 24th, and the seedlings appeared from ten to thirteen days afterward. The photographs show the difference in the garden and brook-grown seedlings, those on the right coming from the brook. In every case but one, the extra-curled, the brook-raised, were the stockiest and by far the best.

Water-cress is true to its name, and may be found along the banks of many swift-running brooks of pure water. It is a sure test of good water,



Water-cress, the stem bearing white, silky rootlets

for it utterly refuses to live in bad, or even uncleanly company. The plants cling to the soft mud at the sides of the stream, the roots send out long, white, silky fibres in every direction, and it looks very much like a floating plant as it sits upon the surface of the water.

Its growth is very rapid, the plant flowering in a few short weeks. If

it is left undisturbed, it will sow its own seed and give a new crop in a short space of time. The roots keep sending up new leaves, and therefore if it is cut frequently, the roots being left in the water, a continuous crop will result. If it is pulled up, as it usually is, "root and branch," new sowings of seed should be made often. Most people use this plant in the early spring and winter, treating it merely as a garnish, but to me it is delightful at any season of the year, especially as a salad.

It can be grown in the garden, provided it is kept very moist, in fact almost flooded with water. The photo shows how poorly it grows in this situation under ordinary circumstances.

The extra-curved variety, however, does exactly the opposite—thrives in the garden and does not do well along the brook. Its leaf is fine and feathery and does not in the least resemble water-cress in flavour. It tastes exactly like common pepper-grass, being decidedly "bitey," and lacking in that delightful pungent quality natural to the water-cress. The leaf is extremely pretty for a garnish, but I would not give it garden room, unless I had more space than I knew how to fill.



Seedlings of the water-cress, the larger one grown in a brook

American cress is a stockier, thicker, ranker growth than the true-water variety. It grows slightly larger in the garden than along the brook, does not bloom until the second year, and is tougher and coarser in flavour than water-cress. If I were so situated that I could not have water-cress, I should certainly have this or the broad-leaved winter in my garden.

The latter variety seemed to thrive a little better beside the brook than in the garden, but whether or not this was due to the eccentricities of the weather in 1903, I cannot state definitely until I have tested it further. The broad-leaved winter is so much like the American that it is almost impossible to tell them apart.

These cress plants are biennial. It seems odd, even suicidal, that the water variety loves to be covered with ice, but this semi-aquatic plant revels in it. The leaves are used chiefly as a garnish, but it may add much to any salad you desire to make. For instance—slice tomatoes, lay them on lettuce leaves, with a sprig of cress on each slice of the red "fruit," and you have added just the touch needed. A bit is a great addition to lobster salad, and I think nothing more is needed than lettuce and water-cress alone.

True water-cress is a native of Europe, and the other cresses, which are really pepper-grasses, are natives of Persia. They all dress in white when they bloom.

The seed of water-cress may be sown (and by this I mean sprinkled over the surface—"sown" is a misnomer, though often used, for few seeds are sown as the farmer



Extra curled cress—that on the right water-grown



American cress, ready to cut

sows clover, or broadcasts wheat), along the banks of a stream, in a cool, damp spot in the garden or in a bed slightly depressed, say five or six inches from the surrounding level, and conveniently near your water supply, so that it may be flooded occasionally. I think this plant worthy of that much trouble, for it will take entire care of itself, if you give it plenty of water and make the bed light, but very rich. I would suggest that if your garden soil is not suitably light and rich, to dig your bed out one foot and put it back with six inches of this mixture: well-rotted barnyard refuse, loam from the compost heap and some sand. The leaves will appear ten days after seed-sowing and are ready to eat in about seven weeks.

The other varieties may be planted in drills, covered with about a quarter of an inch of soil. When the seedlings crowd each other, thin them, and use the ones pulled out just as you would lettuce. Three feet of drill would give you enough Persian cress for a family of two, provided you are fond of it, and a bed of water-cress one yard square would be ample for that variety.

The flea-beetle is about the only enemy garden cress has, while water-cress is unique in having none that I have ever discovered. Pepper-cress may catch black-rot from cabbage, however, but I doubt if you will ever raise this variety in your garden.



Blossom of the extra curled (white) cress

ENDIVE

The very prettiest salad plant that grows is the endive. It is worthy a place in the vegetable flower bed, for it is as pleasing to the eye as to the palate. Grown as a fall and winter salad, it fills in

a niche very nicely at a time when nature's green things are scarce, and if placed in the root cellar, it will keep for a long time.

For fall use, plant the seed the end of June in rows two feet apart and

cover it lightly. The seedlings appear in eight days and are the most satisfactory and easily handled imaginable. They thrive and increase in beauty each day. They should be planted where they are to remain, for they cannot be checked in growth by transplanting at this season of the year. They should stand twelve inches apart, I think, though the cultural directions prescribe only eight. I know mine would have had a better chance and been much happier had I given them the few extra inches. It takes a good deal of land in July to provide the desired room, for twenty-five feet would produce only the same number of plants, plus the one for good measure at the end of the row. How would it do to start them in eggshells, paper pots or some other receptacle, then set them out so carefully that they would never "catch on" at all? I think I should like to try that scheme, though I must confess I have plenty of room to spare for them.



Seedling of the green curled endive

When the plant is well grown, gather the outer leaves together on a dry day—be sure it is a dry day and that the plant is really dry, for it is delicate and rots very easily—tie them lightly at the top with raffia, soft twine or a whip of hay. In a very short time the hearts will be blanched. These whitened leaves are to be eaten as a salad, served exactly the same as lettuce, and it does make a beautiful and dainty dish, with a mere hint of bitterness, but crisp and truly delicious. A few of the dark-green leaves as a garnish add much to the appearance of the salad on the table. It is particularly pleasant when served with tomatoes and mayonnaise dressing.

My plants (and I had four varieties this year) were taken up the latter part of October, the roots placed in damp sand and the heads packed closely together. The box was placed in the root cellar, and I find those that were not tied at the top have blanched fully as well as those that were. Next year

I shall save myself the extra and needless work of tying. It is just as necessary, remember, to take the plants up when dry as it is to tie them dry.



French moss curled endive, blanching

The four varieties I mentioned having were broad-leaved Batavian, which has, as the name implies, a broad leaf and somewhat resembles lettuce; French moss-curl, which is perfectly beautiful, both to sight and taste. The leaves curl up in tight knots, as fine as fine can be, and it blanches exquisitely. The third variety, the green-curl, is equally handsome, making a broader, flatter head, while the moss-curl grows more in the shape of a ball. The green-curl is the prettier when blanching, for the heart becomes very white, while the outer leaves remain a rich dark green. One of these plants, set in a bowl of water in the centre of the table, makes as pretty a centre-piece as one could wish.

The white-curl is very beautiful in the garden, for it is always a delicate shade of green and makes a pretty effect if grown between the green-curl and the French moss-curl.

There is one sure thing, my garden will always contain endive, if I can possibly find time to plant the seed.

PE-TSAI AND PAK-CHOI

One of our delightful new acquaintances last summer was pe-tsai, or Chinese cabbage. It is really a lettuce, and we enjoyed it very much. The seed was planted April 24th, but could have been planted earlier. It took six days to germinate, and then Mr. Flea-beetle discovered and promptly appropriated it, riddling the leaves so badly that I was ready to weep. Fortunately, coal-ashes helped us to defend it, so that by the end of May we had good plants for setting out. They were placed ten inches apart, protected from too much sun for one day, and became as strong and sturdy as could be desired. They rapidly grew into heads like Cos lettuce, with a thicker, coarser leaf and fleshy, white midrib. "We won't like these," I predicted.

The Man from Out West said, "Do I have to eat those emblems of an ancient civilisation, badly warped?"

Well, we shook hands with delight when we tasted it, for it was crisp and tender; flavoured with a fleeting hint of the radish, but entirely lacking in bite. It was ready to use June 16th, when lettuce is generally scarce. Pe-tsai for a luncheon salad would be decidedly "fetching," I think.

From the centre of the leaves it sends up a stalk, with pretty yellow blossoms on it, and as this happens early in the season, a second planting should be made if you wish for edible plants in the fall as well as early summer.

I prepared it for the table as I would lettuce, with mayonnaise, and I should think it could serve just as many purposes as lettuce.

The seed resembles a radish, so does the seedling, and it needs about the same treatment as cabbage. A very rich soil, and a little nitrate of soda after transplanting, produce a rapid and tender growth, and give the best heads. Try some next summer.

I want to tell you about a nice, convenient seed bed I had last year. Parallel to our garden on the eastern side is a grape arbour, about eighty feet long, and between the arbour and the garden is a border bed, separated from the garden plot by a path. This bed was designed to permit the cultivation and fertilisation of the grape vines, but I intend to have roses and lilies in it. The nucleus is there now, to be added to little by little, which is much the more enjoyable way. The front edge of this border, just along the path, served for my seed bed, and here I started sometwenty-five or thirty varieties, giving some six inches, others one foot of space. These were, of course, only the transplanting varieties. Stay-at-homes, such as chervil, parsley, etc., had more room allotted to them.

Pe-tsai's cousin, pak-choi, has been invited to spend next summer with us. His leaves grow tall, with a heavy midrib, and are boiled, green and all, or the midrib is served in the same manner as chard and asparagus.



Broad-leaf Batavian endive, ready to blanch

CORN SALAD

There is a very obliging little plant that allows us to sow its seed in the fall. It stays out through all the snow and ice, and when spring comes makes a nice head of salad for us. Its name is Corn Salad, or Lamb's Lettuce, perhaps an old friend of yours. I am just making its acquaintance. If sown in the early spring, it forms good heads in about seven weeks, but I prefer lettuce at that season of the year, and think it wiser to winter the corn salad. It is a very comfortable feeling to look out upon the garden plot, buried deep in snow, and to know that at least one plant is there ready to go to work in the spring without any help except the removal of its blanket of salt hay.



The seed bed along the arbour

My seed was sown the first of August in drills, buried about a quarter of an inch deep, and the seedlings appeared in eleven days. Then we had one of those awful storms that come once in a long while—such wind, such rain! It seemed as if everything that remained standing must surely perish. I looked at the poor garden, but turned away in despair—would anything be left on the morrow? Then the sun came out full and strong, as it does after one of

nature's outbursts of temper, and forth I tramped among my plant children to find the poor wee corn salads nearly buried. "Gone," I said to myself. "They will never be able to live through that." When the Man from Out West came home, I said to him, "Three weeks lost on the corn salad. It will never get start enough to pull through the winter now." But when he went into the garden, and got down on his hands and knees (I envy him; he doesn't have to be careful of frocks and frills) he did something among those seedlings with his deft fingers and lo and behold! the corn salad stood up as chipper and happy as ever.

"Well! As you are so clever, suppose you thin them out for me."

"Not on your life! If any thinning out has to be done you can do it, and I will go away where I can't see you."



Taking up endive and placing in a box, the roots in sand, to store in the root-cellar. It will keep for some time

Doesn't that sound almost excessively tender hearted from a wild and woolly westerner?

Late in October we covered the plants with just the least bit of litter. They shall have a warmer overcoat shortly.

This little plant is used in the same manner as lettuce, though I believe it is never cooked. I think it is an annual, because the spring-sown seeds bloom in June, and if the seed is sown in the fall they do not bloom until the following summer. I wish I could tell you what it tastes like, but I have not yet had the pleasure of eating any. I have two opposing verdicts in regard to it, however, one from an American—"Bum!" (American also), the other from Monsieur Vilmoren-Andrieux, the famous Frenchman—"Delicious!"

CHICORY

It has always seemed odd to me to grow chicory in the garden. You surely know it is the bright blue flower seen along the roadsides in August, which greatly resembles the corn-flower, the favourite of Emperor William, as well as of a host of royal Americans, old and young, rich and poor. Its foliage is beloved of the Frenchman, who terms the blanched leaves served as salad, "*Barbe de Capucin*." The roots are perennial, and are used as a substitute for coffee, as we all know to our sorrow, although many nations prefer a greater percentage than we often unwittingly buy.

We had three varieties one year, the common, the large-rooted and the Witloof, but had it not been for my "stick" helpers I could not have told them apart. The seed of the large-rooted and Witloof was sown in April and transplanted, allowing a distance of six inches apart, the last of May. Some plants of the large-rooted variety that were not lifted had their leaves cut and boiled June 19th. It tasted like boiled dandelion, only a little more bitter, and I think



Lettuce-leaf corn-salad seedling



Witloof chicory. When blanched, it is the *Barbe de Capucin*

the human craving for the "tonic" flavour has passed by that season of the year. The odour is like that of tea leaves after being steeped. If, however, you wish to cook the plant, cut the leaves, wash thoroughly, and place them in a tightly covered kettle; heat slowly and boil in the water that comes out of the leaves. When tender, as it will be after about an hour's cooking, turn into the colander, drain and chop fine, serve with drawn butter or vinegar. The Witloof has a slightly broader leaf, but the flavour is identical.

If you wish the Witloof as a winter salad, sow the seed in June, not too thickly. Allow the plants to grow until November, then dig them up, remove all side shoots and cut off the leaves to within one and a half inches of their base. Cut off the roots also, until the plants are a uniform height. Place them in a trench, eighteen inches deep, two inches from each other, fill in the earth, and pile over the top a foot or more of manure. In a month the heads of leaves will have formed, and they are ready to use. Perhaps storing these roots in the root cellar would serve the same purpose. It might be worth while to try.

If you want the "*Barbe de Capucin*," blanch the inner leaves by tying the outer ones at the top, or by boarding up, or following any other method suggested. Boarding was unsuccessful with me, for the plants rotted before they blanched. Binding them with old matting served the purpose better, and in eighteen days they were ready for use. The blanched leaves are served as a salad, but the French may have them



Blossom of the Witloof chicory

for their very own, as, personally, I am not fond of bitters, though I should think a very little of the leaf, cut fine in another salad, would be pleasing.

The common variety was not sown until the end of June. They shall be taken up, root and all, put into boxes of sand in the root cellar and allowed to blanch in the dark.

Professor Bailey says the roots also are eaten, like beets or carrots, but they do not appear inviting to me.

Chicory is a perennial, coming up from a large rootstalk each year. The flower is a good one for the vegetable flower plot, provided it is surrounded with fairly tall-growing plants, as it is inclined to be straggling when it blooms, and the faded blossoms turn brown very quickly and become unsightly. For the blue of a vegetable flower bed, I prefer borage.

CELERY

A certain distinction must be made in this chapter between the plants whose leaves we eat in their entirety and those whose stems alone are used for culinary purposes. The latter are celery, rhubarb, cardoon, and asparagus, though the last-named is really leaf, bud stem, and all.

Celery is one of the very best things to have in the garden, for it is one of the tonic vegetables, coming to us when greens are scarce, and when the physique that craves meat, and is eating much of it, finds in celery the needed counterbalance. It is considered the best nerve tonic in existence, and many people are so fond of it they carry the dried root in the pocket, chewing it as children chew gum.

The difference between celery, as usually obtained after devious wanderings and waitings, and that direct from "the garden to the table," is as great as in cabbage. Store celery goes through many hands, stands sometimes for days as well as nights, is subjected to great changes of temperature, from the time it is gathered on the farm and delivered at the home, through the medium of the grocer. That from the garden is crisper and sweeter than any you have ever tasted.

If you are extremely fond of this plant, you can have two crops, one in the early summer, the other ready to use and keep through the fall and winter.

It is an interesting plant, for it presents many possibilities of change in its culture. It is rather bothersome as a child, for, though well enough behaved, it demands a good deal of attention. The seeds must be sown in

the house, or in a hotbed, in January or February for early celery. The best plan for these early birds is to have them in the house, where you can watch them. Buy or make what gardeners call a "flat," really a flat box, not more



Celery seedling, ready for first transplanting

than three inches deep. A well-made wooden box, that has held soap or anything else, will do, cut down to this depth. Put about six small auger holes through the bottom for drainage, set the box on a tray and fill it with rich, finely sifted leaf mould, which contains a good proportion of sand. Celery loves light, rich soil, and the flavour of the plant is much finer from that kind of land than when it is raised on a heavy clay, bog or peat soil.

Scrape the earth off even with the top of the box, shake or press it down with the hand, and, if the soil is very dry, sprinkle it lightly with a rose sprayer and let stand

a little while before sowing the seed. There are two methods for doing this: one is to sow or sprinkle the seed over the entire surface; the other to mark shallow drills, one or two inches apart, and sow the seed thickly in these, barely covering it. I prefer the latter plan, for in that way it is easier to lift the seedlings when the first transplanting time comes. Place the flat in a bright, moderately warm window, and water very gently when the surface shows a tendency to dry out. The seedlings appear in two or three weeks—annoyingly slow, aren't they? If you are impatient and find it hard to wait so long, the seed may be soaked in lukewarm water for twenty-four hours before sowing, to soften the hard, outer shell, and thus hasten germination. This is not generally done among celery growers, but whether it injures the seed or not, I do not know. When the seedlings appear, tend them carefully, turning the box each day that they may not be drawn in one direction toward the light. Keep them moist, but not wet, and not too warm, or they will be tall and spindly. If they are too thick, pull out a few weaklings and give the others a better chance. When

the second leaf appears, and they are jostling and pushing elbows for room, transplant them into a second box, deeper than a flat, or into a coldframe, if you have one. If you wish particularly to have fine early plants, put each seedling into one of the invented receptacles (I should think felt roofing would be good, as eggshells and charlotte-russe cases are smaller, tomato cans larger, than necessary) so that, when the final transplanting comes, no shock will be sustained by the root system. Think carefully before you do this, and see just how many roots of celery you will raise, for if you covet as many as we do, they will run up into the hundreds.

Late celery may be sown in the same manner and tended in the same way as the early varieties, sowing the seed the last of March or the first of April. If you have a well-protected seed bed, or a coldframe, they can be started at once in either, and the improvised seed box is also fine for these fellows. You may wonder why they have to be transplanted from the seed bed into another bed and thence into the garden, for it sounds like unnecessary work. You can try sowing the seed in drills in a bed, thin out well and allow the plants to remain there until it is time to set them out into the garden, but this is what you will "go up against": Celery makes a long tap root, that is, a root which goes straight down into the earth with very few fine, side, or fibrous roots. When the tiny seedling is transplanted, the end of this tap root is usually broken, the fibrous roots are forced to start work, and they make a clump. Then when the second transplanting time comes, the root is not so long, but bunchy, and not nearly so liable to be badly injured. If the seedling is allowed to remain in the seed bed until setting-out time comes, it has a root so long that it is almost invariably badly broken in lifting, and the shock being much greater, the plant's progress is



The heart of the stalk

seriously retarded at the time when it needs to grow most quickly. Therefore, two transplantings are far ahead of one, and if one of these has been into an individual receptacle, that is better still.



A celery trench lined with salt hay, the plants partly in place

The time for setting it into the garden is most interesting, for then you must choose just which way you wish to grow celery. Are you going to bank, blanch, board or bed it? To put drain tile over it or take it up and store it in the dark? If you make a bed, how long should it be, and how wide? If in rows, single or double? In a trench or on the level? One almost stops to take breath. Never mind, the problem is very simple when you have looked into it a little. No matter in what

way you choose to grow the plant, the preparation of the soil must be the same.

I reiterate, celery loves a very rich, light soil, well drained, and it craves plenty of water, often. It is found wild in the marshes of England and on the continent, so you may know it needs a great deal of water. Dig your trench, or bed, deep, put in some well-rotted manure, or, if you can possibly get hold of it, some hen droppings, and if the soot from the chimneys has not gone on the rose bed, add that too. A little bone-meal and wood-ashes will not do any harm, for celery is not subject to indigestion from overfeeding.

Let us run over the different ways of blanching celery, before we finally set out the plants.

One way is to make long rows, setting the plants six inches or a foot apart, and as they grow, drawing the earth up around them to form a bank on either side. One great precaution to be taken in doing this is to be very, very careful not to get any dirt at all into the heart of the plant. Careful "handling," as it is called, is of vital importance. Gather the leaves up tightly in one hand, holding the outer ones well around the heart or the young leaves in the centre, and draw the earth up to the plant, firming it well. It is wise to have two people at this work, as it is difficult for one to manage it alone,

and the photograph shows you what happens, when the earth does get into the heart. The young inner leaves cannot come up straight because of the weight and obstructions, so they twist and bend around in hope of finding a loophole for escape. You can make double rows in this same way, setting the plants criss-cross, six inches apart, just as rails are laid for an old-fashioned Virginia fence.

The plants may be set in single rows, with enough earth drawn around them to hold them upright, and, when they are nearly grown, a board may be placed on either side, as close to the stems as possible, and almost to the top of the leaves. A strip or clamp is placed across the boards to keep them in position. A twelve-inch board would be wide enough, and the length in proportion to the length of the row to be blanched. To make sure that the leaves are well up, slide the boards in edgewise, raising the leaves as you make it perpendicular.

If you wish to use drain tile, set the plants a little further apart, according to the diameter of the tile used, five inches, inside measurement, being quite large enough. In order to place a tile over a plant, it is necessary to tie



When earth gets into the crown in hanking

the leaves loosely together, with raffia, soft twine, or, better still, with a strip of soft paper twisted, for it will fall to pieces when damp, and the plant will again be free. Tile and boards are best for early celery, and they are both extremely useful for keeping the plant clean, while the tile has the further advantage of keeping it cool. Banking is better for late celery, as it can withstand frost better when protected by earth.

Beds four feet wide, and as long as you choose, may be made, and the celery plants set into them ten inches apart, with boards placed perpendicularly along the edges, to hold the plants in an upright position. I should not care for this method, since it would render weeding very difficult, though it would save land space. This celery would either have to be dug up and blanched by storing, or protected by earth or hay where it stood. I really think, for the amateur gardener, single rows are the best.



Opening a trench of earthed-up celery

You know celery is a companion or second crop; it can go in after something else has been harvested. I stumbled upon an odd fact this summer, which I have since confirmed by reading. Celery needs nitrogen. You remember, peas draw this element into the earth. I had three rows of celery in the garden, and was heart-broken when the first

row was dug, it seemed so poor and miserable; the second row was better, and I was fully satisfied with the third. The Man from Out West and I put our heads together to discover the reason.

"I know," said he, "this last row has been shaded on one side by broccoli and cardoon and on the other by collards."

"And I have it," said I. "That's where the sugar peas grew."

I guess we both had it; for it must have been a combination of nitrogen and prevention from evaporation of the moisture in the soil.

Have you decided which way to grow celery? If so, let us set out the plants. The bed or row is made, raked fine, and the garden line run. Now make holes with the dibble, or, if your plants are too large, with a trowel, every six inches. Take up the plantlets carefully, having run a knife between them to separate the roots, and place them in a basket, box or pan, a few



Putting celery in boxes for storage in the root-cellar

at a time. Set them one by one into the holes, firm the earth well around them, and at once protect each with a mulch. Proceed thus to the end of the row. The mulch may be straw, leaves, hay, or cuttings from the grass—anything to conserve the moisture in the soil while the young plants get started. Water well after the mulch is on, and you ought to have celery fine enough to take a prize anywhere.

There are two diseases that celery is subject to, rust and blight. The



On the left, Cooper cutting, for soup ; next, celeriac ; then table celery (Winter Queen)

former is shown by yellowish spots on the leaves, the latter first by watery spots, then by black dots. Good seed and healthy plants will probably escape both, but if you are forced to combat them, Bordeaux mixture is the thing. A certain insect attacks this plant, known as the "celery fly." The grub gets into the stem and eats away the pulp, so that the leaves become yellow and withered. These flies seem to attack celery more in England than here, for I find it described only in English books. The one remedy given is to cut and destroy the leaves that are attacked.

There are several varieties of celery—table-celery which is cultivated for the use of the uncooked stem; Cooper cutting which is used for a flavouring; and celeriac, a large root which will be taken up later under that heading. Of the former, there are no end of varieties—golden, white and pink—and I leave it to you and your seedsman to make the choice. My row of which I am so proud is Winter Queen (the other rows had some of this variety, too), and it certainly is fine and crisp and sweet.

Are you going to store it during the winter? There are several ways. If you have a root-cellar, and wish to place some in it, take up the plants, pack them in boxes, with the roots in moist soil, where they must be kept very damp, and never allowed to dry out. If the root-cellar is very dry, with a strong current of air across it, as in mine, it is not the place for celery, unless it be packed in earth. We read somewhere that the roots could be placed in boxes full of sand and then stored in the root-cellar. We tried it, and several days later wept together because we had lost the contents of two great boxes, enough to last until after the holidays. A tub of water was soon procured, the plants set into it, and that night they were as crisp and fresh as if they had never thought of wilting and dying. Then they were taken out and set into the coldframe, even though my seedling parsley had to be sacrificed, for who would ever sacrifice celery to parsley? However, a little can be left downstairs, if frequently watered, for do you know how much it means to a housewife to be able to go into her root-cellar and put her hand on celery, endive, apples, potatoes, cabbage, onions, carrots, salisfy, parsnips?

Keep some celery in the garden until after Christmas. If you are too busy to make a pit and the celery is already banked, throw some hay over the top of the bank, a little more when colder weather comes, and, finally, earth over that. If you can dig the roots and make a pit, it will be much easier to get at when you want it. Dig a small trench about one foot deep, line the sides with hay (salt hay preferably), place the celery in the trench, roots down, and close together, seeing that the hay surrounds the plants entirely and then bank up the earth, to make a miniature mound. Work from north to the south, so that you can enter this aboriginal dwelling from the southern end. If frost gets through the earth, it can't get through the hay. Thus the celery is safe and happy.

Do not take up this vegetable to store it until there is danger of severe frosts. It loves cold weather, and should not be kept too warm. A sheltered

spot may be selected. Upon it at a distance of about three feet from the ground a light frame roof covered with cornstalks, brush or sod may be built, and the celery stored within it. The innumerable ways of keeping it tend to make its culture so fascinating. You may say: "Who would ever take the trouble of planting those seeds in the house, and then transplanting them twice?" Well, you can buy young plants ready to go into the garden, just as you can buy tomato, cabbage, and cauliflower plants; but remember they are not *your* vegetables, scarcely half yours, as you become merely a foster parent.

There are numerous ways of preparing celery for the table. The favourite way, of course, is to eat it raw. The plant should be thoroughly washed when brought into the house, the root cut off, and the outside leaves discarded, as they are usually discoloured and split. Then each stalk is separated from the heart, scrubbed clean with a small scrubbing brush, and laid on a dish. The root, or crown of the root, may be cut into thin slices or small dice for those who care for the concentrated flavour of celery. We enjoy it very much.

Curled celery is made by cutting the stalks into inch-long pieces, slicing or fringing the ends almost to the centre, and placing them in cold water, where in about an hour they will curl up. One end only may be fringed, leaving the other plain to serve as a handle.

Celery soup is delicious. The celery is cooked tender, rubbed through the colander, boiled in the double boiler with milk, butter and flour until creamy; salt and pepper are added and a little onion juice, and bay leaf also, if you care for it. If the flavour of celery is not strong enough, a little celery seed will strengthen it. This soup should be strained before serving.

To serve with fowl, celery may be cut into inch-long pieces, dipped in beaten egg, then in breadcrumbs and fried in deep fat until golden brown.

After it is thoroughly washed and all the defective leaves and green tops removed, it may be boiled without separating the stalks, by tying the heads together, and dropping it into boiling salt water. It should boil gently for one hour; and the bunches then lifted and arranged on a platter to be served with either cream or Hollandaise sauce.

The stalks are cut into fine pieces by laying several together on a cutting board, and drawing a sharp knife across all of them at once, making pieces about one fourth of an inch wide. This is used in chicken or lobster salad, or plain, upon lettuce or endive leaves.

The celery may be cut into pieces, half an inch long, boiled in salt water until tender, drained from the water, and covered with drawn butter. In this way any left-overs, or pieces not quite handsome enough to be served in their natural state, may be used.

There are several other modes of preparing it, and each seems very attractive.

It is conceded to be the best vegetable nerve tonic known.

UDO

We can scarcely wait for spring to come to meet a new acquaintance from Japan. Udo is its name, and in the stories that come to us from the land of the many-rayed sun, it is praised extravagantly. It is crisper than celery, as tender as lettuce, and has a faint flavour of pine. It really sounds too good to be true. To cap it all, it is a winter salad, coming when we most crave and really need green, crisp, refreshing vegetables.

There are two varieties of udo, Kan and Moyashi, the latter being a forced variety. The seed of kan udo is sown broadcast in seed beds in March or April, and the following year the seedlings are taken up and set in rows, two feet apart and ten inches from plant to plant. When the leaves begin to turn brown in September, they are all cut off, and earth is piled to the depth of two feet right over the roots. In about forty days, shoots will appear at the top of the mound, and these are cut close to the root just as you would cut asparagus. A second crop of shoots then comes up, and sometimes a third. When cutting has ceased, the plants are left covered in the earth mound all winter, but in spring this is levelled off. A rich dressing of manure is applied to each side of the row and the plant is allowed to grow all summer. In September the leaves are again cut down and the mound heaped. In this way the roots last ten years. It sounds almost as easy as asparagus culture.

The stalks are served like celery salad, cut into small pieces, thrown into ice-water for an hour, drained thoroughly and served with French dressing, to which has been added a drop or so of Tabasco sauce.

Moyashi is grown from root cuttings. In March or April the roots are laid lengthwise about four inches apart in a shallow trench, manure is packed between them, and two inches of soil laid over the top. As the leaves appear, more soil is filled in until the trench is full. Cultivated well all summer, they are ready to take up in October, when all the dry stems should be removed.

They are then packed away in hay or straw, where they will lie dormant until you are ready for them. Make a pit in a coldframe, set the roots in as close together as possible, after sprinkling the bottom with bone-meal, then pile on very light soil, full of leaf-mould. In fifty days the shoots will be ready to cut.

CARDOON

Cardoon, that handsome and luxuriant producer of the one remaining leaf stem (distinct from the leaf proper) that we eat, is one of the most beautiful plants in our garden. It must be a very new acquaintance, for



Spanish cardoon, three months old

I can discover little about its culinary uses. The seed catalogue directs to bind the leaves, blanch the stalks, cut out the midrib, and serve as a salad. But, alone, it is extremely bitter, a pleasing bitter, and a splendid appetiser, but not suited to the average American taste, though a little of it makes a good addition to another salad, such as lettuce and celery or lettuce and tomatoes. Mrs. Rorer, in her new cook book, says that it should be cooked and served very much like asparagus; that is, cut out the midribs, tie in bunches, and boil in salt water until tender. Drain and serve with cream or Hollandaise sauce.

One seedsman says: Sow the seed in the early spring, thin to one foot, and blanch when full grown. Another says: Sow in April one inch deep, and when one year old transplant into trenches of well-manured ground, three feet apart, setting the plants one foot apart. The roots remain from year to year.

We have had great success with ours. I tried both methods of culture and found that transplanting gave by far the better results in the long run. The plant has a spreading, umbrella-like growth, and is beautiful in colour and in form. The leaves measure three feet by twenty-three inches, and are markedly serrated, very slightly spiny, and of the softest silvery green. I shall move my largest one and give it a vantage spot in the shrubbery next spring, for it is certainly a thing of beauty. No, on second thought, it shall be the centre of the radial garden. Borage shall go into the shrubbery.

Whether or not cardoon blossoms the second season, I have yet to dis-

cover. That is one of the charms of this new acquaintance: it does not give up all its secrets at once.

We had several experiences with blanching this Spanish gentleman. Our first experiment was binding with raffia the outer leaves on June 25th; but he objected, for he evidently had not yet attained his full growth. The centre leaves burst the binding and calmly followed their own will, spreading as broadly as if nothing had happened.

Next we placed boards (they happened to be old shutters), securely nailed together, in the form of an inverted V over the top of them. "Now, my brave fellows," said I, "you can't burst that."

In about a week I looked at them to see if they were "white as snow," but to my utter astonishment and disgust they were dead.

"Well," said I, "what next?"

The Man from Out West arrived on the spot and, seeing my long face, said, "If you had done as I told you, and tied the leaves loosely together, and then wrapped some old matting around them, they would have been all right."

So I tried this scheme. Experience had proven to me that he would not say "I told you so," though I know he thought it when in a fortnight he had the pleasure of photographing the attractive whitened stalks.

It is a good deal of trouble to blanch these fellows with matting, so the rest of them have been uprooted, and placed in the root-cellar, wickedly, I suppose, for I may have to plant seed again next year. But I am much afraid we love it for its beauty alone, and the few roots that remain in the garden will probably suffice for our needs.



The cardoon in its Japanese kimono

RHUBARB

Rhubarb is another of the tonic plants, a healthful bitterness being formed in the leaf stem, and it is very pleasant to eat in early spring.

This plant is perennial, grows from division of the root, or seed, but the surest method of getting good varieties is by root division. Seedlings cannot be transplanted until one year old, and I imagine none of us have the patience to wait so long, when we can have a flourishing plant the first year.



What not to let the rhubarb do

Autumn is the best time for setting out roots, and you will have to plant them in a deep and wide hole, just full of manure, hen manure, stable manure, bone-meal, wood-ashes, and anything else you may have in the plant-food line. They are extraordinary in their powers of food absorption—but one has one's reward when one gathers the next year's leaves with stems as long as a hoe handle. The plants form a perfect rack full of raised umbrellas. Therefore, set the roots three or four feet apart, so that they may have plenty of room.

Don't pull too many leaves the first year, but be kind and gentle. When you pull them, don't do as I did, cut them with a knife, but press them down-

ward and sidewise and they will break off clean and prettily, with the curving clasp in view which they had on the main stalk. Be careful not to injure any buds in doing this, and do not allow the plant to bloom, as we did. We have now had lots of experience, but are not ashamed of mistakes made through lack of it. The blossom naturally demands all the strength of the plant. Hence the leaves would become a secondary matter if it were allowed to bloom. It seems wrong to cut off its weirdly shaped blossom, but it will get awfully mad and make the leaves double their natural size.

Of course, you know how to stew rhubarb. It is a very simple performance. Cut the stalks into pieces about a half an inch long, exactly as you do celery, pour on boiling water, and allow it to stand fifteen minutes. Then drain off this water, which has drawn the bitterness out of the skin, and pour over just enough boiling water to surround the rhubarb, sweeten to taste and boil until the pieces are tender, but have not fallen to shreds.

Rhubarb pie is made by placing stewed rhubarb between two crusts and baking it. As for preserving, or canning, it is the very easiest thing in the world to do. Cut the stems into pieces of a convenient length; wash thoroughly, place in glass jars, and fill these to overflowing with pure cold water; shake well, to make sure that no bubbles of air are left lurking among the pieces; then seal tightly. Stewed rhubarb may also be canned by cooking it, as before mentioned, pouring it into the jars while it is boiling hot, and sealing at once.

ASPARAGUS

Again a tonic vegetable, asparagus. Mr. Hale says he doubts if one out of a hundred families ever had all it wanted. Well, a very few plants will give it to you in abundance, and it is one of those delightful perennials that cheerfully, even joyously, leap up from the root every year, apparently one of Nature's own weather prophets, filled with an impatient desire to put in an early appearance. It is a wonderfully long-lived plant. Beds at Oyster Bay, that spot famous for the abundance and quality of its asparagus, have been producing for more than thirty years. When your asparagus bed is once started you need not worry much about it for several years. It needs care, of course, but not the kind of care required by some plants. The roots must be several years old and well established before the shoots can be cut, and even then very sparingly at first, or the plants will be weakened. There are two methods of starting a bed of asparagus, either from seed or from roots

one or two years old. These can be purchased from the gardener's furnisher, but be sure to get them from a reliable firm, for a good one-year-old root is very little different in appearance from a poor two-year-old one, but very different in productiveness.

If you use the former method, start with good seed, make the bed of the desired dimensions, fork it quite deep, work in a plentiful amount of fine, well-rotted manure, be sure the earth is made fine and friable, and, above all, see to it that it is well drained. Then sow the seeds in rows fifteen inches apart, and bury them one inch and a half deep. Do not sow too thickly, for the plants must not stand, after thinning, closer together than three inches. It is a seed of slow germination, so it is well to plant radish seed in the same row, for these fellows are jumpers and will serve three purposes—they will mark the row so that weeding can be done, break the surface of the soil to prevent baking, and give you a crop of radishes as a sort of extra dividend. Take good care of the young plants, keeping them free of weeds and the soil loose and mellow. In the fall, when the feathery leaves have turned yellow-brown, cut the stalks off at the ground, dig up the bed to a depth of three inches, whiten the ground with salt, and put over the entire surface four to six inches of fresh, loose, stable refuse, filled with straw. Some English authorities claim that it is wiser to sow salt once a month, and, although I have never seen that theory advanced in America, it may be worth a trial.

The following spring rake off the coarsest of this manure and dig the balance under. The young shoots appear early, and if you have never seen them before, you will have to look closely for them. Asparagus may be forced, by lifting the roots carefully in the fall and placing them in a hotbed or greenhouse. The roots should be covered, first lightly, then more heavily, until a depth of four to six inches has been obtained, using for this covering either well-rotted manure or old tanbark.

I know a young married couple who went to housekeeping in a pretty place in the suburbs. The mother-in-law arrived for her first visit and, on looking over the grounds remarked, "What a fine bed of asparagus?" "Asparagus! Where?" said the young couple in great consternation, and there, right before their eyes was as handsome a patch as one could wish to see.

Tiny green shoots appear here and there over the ground, and these must be cut when not more than a couple of inches high, for it takes but a little while until the leaves begin to appear from underneath the scales of their mail-clad heads.

If your bed is seed-sown, the following spring will give you what is termed "turions," no larger than a lead pencil. You may cut a few of these for a treat, but not a great many of them, as the plant needs all its strength this first year.

If you have planted one-year-old roots in the spring—and spring is by far the best time to plant them—they should be set in rows, the top of the stalks, or buds upon the roots, six inches below the surrounding level. It is wise to dig trenches for the roots, and to put in drainage, if the natural drainage is not good, then some well-rotted manure, a little bone-meal or complete fertiliser, and a layer of well-powdered loam. Don't forget to mix all thoroughly, and then set the roots on this foundation and fill up the trench. It sounds like a great deal of work, but, remember, it is only once in eight or ten years, perhaps even in twenty, so you can afford to devote considerable time to it.

The cultivation of the roots is exactly the same as for seed-grown plants, only you do not need to sow radish seed, as the shoots are all ready to push up out of the ground.

It is a question among asparagus-growers whether more time is gained by planting seed or roots. Some contend that seed takes longer to reach the productive stage, but produces the fine results, and that the shock to the root in transplanting and the time it takes to recover fully balances the time taken for seed-sown plants to mature. Our bed was root-planted, a delightful present from the man who thinks few people have asparagus enough to suit them, and the cutting from our bed the spring after planting was light, but perfectly delicious, and it filled us with joyous anticipation of future feasts.

There are innumerable varieties of asparagus, ornamental as well as useful, but the three best known and more generally cultivated for table use are Connover's Colossal, Moore's and Palmetto. The first produces large, white stalks, the last smaller, green stalks. We prefer the Palmetto, for there is in it more truly edible asparagus, and less of the pretty, rotund stalk.

After the first season of light cutting, that is, in the second cutting season, the bed should be cut every day from the time it first appears up to May, allowing none to run up into stalk. The following year lengthen the cutting season, so that the harvest time may be a little longer, and increase each year until the season extends to eight weeks. After this period is reached, start over again, and the following year cut comparatively lightly, progressing in



Bunching Conover s Colossal asparagus

like proportion each succeeding year. This gives the roots a chance to recuperate, and the bed will not run out so quickly as if worked continuously to its full limit. If you have two small beds instead of one large one, cut one heavily one year, the other lightly, and reverse this method of procedure the following year.

After you have ceased cutting, it is wise to work over the ground a little and give the plants some food, for it is from this time and throughout the rest of the summer that the roots are storing strength for the coming season's crop. Liquid manure is particularly beneficial during the cutting as well as during the growing season, and most satisfactory returns are certain.

For cutting asparagus there is a special knife which resembles a chisel. Its curved blade, with or without a V-shaped notch, is fastened to a long, curved handle. The blade is slipped down along the side of the stalk some distance under the surface, slanted sidewise and the shoot cut off. Care must be exercised in this process not to injure other shoots under the surface. The stalk may be allowed to grow six or eight inches and then cut off at the earth's surface, but this method does not secure the white base which is generally sought.

"We"—I mean the other one of "us"—usually removes the soil from about a stalk, and then cut it off where he can see it. We do not care for very long stalks, the top part being by far the best portion of the vegetable.

In cooking asparagus, the personal equation comes in strongly. Some people like the whole stalk boiled intact, others prefer it broken into small pieces. We prefer it broken, and this is how I cook it: Starting at the bud end, I snap off a piece about one inch long, and continue in the same way down the stalk. Where it will not snap, it is not fit to eat, as that part consists mainly of fibre, and I discard this tough end. This is a sure way to prevent the appearance of woody pieces in the served dish, and, though there is little danger of having unpalatable portions from one's own garden, there is considerable risk of running across pieces closely allied to kindling wood in asparagus which comes from the green-goods purveyor.

Whether it is to be cooked in the full-length stalk or broken in pieces, it should always be thoroughly washed, and then dropped into boiling salt water. I do not mean water that is merely very hot, but water that is boiling violently. In this the vegetable starts cooking almost immediately, instead of becoming soft and soggy as the temperature of the water rises to the boiling point. When the shoots have grown tender, drain off the water, place them

on toast, and cover with drawn butter. As rhubarb is a physical tonic, so asparagus is a physical cleanser, though it is unwise and even harmful for some people to eat it. Cream-of-asparagus soup is one of the most delicious of this class of soups. It is made in the same way as lettuce or spinach soup. Asparagus may be eaten cold, served with Hollandaise sauce, or placed on lettuce leaves with French dressing.

"Asparagus in a boat," by Mrs. Rorer, sounds very attractive. A loaf of bread is cut into the shape of a boat and hollowed out. It is rubbed with



The asparagus leaves have been partly cut off and burned to destroy the little gray bug that feeds on them

melted butter, then set in the oven to brown. The boiled asparagus is placed in the boat and covered with a yellow sauce, made of one pint of milk, the yolks of four eggs, salt, pepper, and butter. It may also be baked, after boiling, by being placed in alternate layers with a plain white sauce, or one to which hard-boiled eggs, chopped fine, have been added. Breadcrumbs should be sprinkled over each layer of the sauce, as well as on top; then it is baked until light brown in a quick oven. Some people prefer this vegetable boiled plain and served with melted butter.

I must tell you a little of the history and peculiarities of asparagus, as

perhaps you do not know them, and they are very interesting. To begin with, it belongs to the lily-of-the-valley family—who but a botanist would dream it! It has been known very long, having been used both as a vegetable and as a medicinal plant among the ancient Romans. They cultivated it to such an extent that Pliny records three stalks weighing one pound. It is a salt-marsh plant—that is the reason we feed it with salt. It is one of those odd plants where the sexes are separated, one root bearing seed-producing stalks, another non-seed-producing. Those that have the seed bear a flower which contains an ovary and pistil; while the other flower contains the stamens which hold the pollen to fertilise the seed. It seems odd that Nature should see fit to make some flowers incomplete, while the majority contain all the parts necessary for the production of fertile seeds.

The plant came originally from the marshes of the old countries in southern Europe and northern Africa, but it spread with the soldiery into all parts of the globe. It grows remarkably well in several portions of the United States, but Long Island and New Jersey seem to be its favourite habitations.

The foliage is beautiful, feathery, and light green, affording an exquisite “green” for cut flowers, while the blossom is very insignificant, of greenish-yellow hue, and borne in the axis of the leaves. The seed pods, little green balls, mature into brilliant red berries, but do not let them ripen, for they will take strength from the rootstock, and besides, volunteer asparagus is not desirable.

Asparagus enemies are rust, root-rot and beetles. Rust comes on this plant as it does on beans. Brown specks appear and the leaf shrivels up and turns yellow. If rust appears, a fact you will soon remark, cut off all affected branches close to the ground and burn them at once. Early in the autumn do not fail to burn all the branches, so that the disease may not spread. Spraying with Bordeaux mixture and Paris green may help somewhat and certainly cannot do any harm.

There are two beetles that feed upon this plant, both immigrants from across the water. One is known as the asparagus-beetle, the other as the twelve-spotted beetle. They both feed on this plant alone, the former being found in greater numbers.

We have kindly insects to help us in the destruction of this pest, however, such as the quaint friend of our childhood, the little ladybug. Some snake-feeders, or dragon-flies and wasps, and the spined and bordered soldier-bug—all these eat the larvæ of this beetle. Ducks and chickens are fond of them;

air-slaked lime dusted on the dew-wet leaves destroys the pest; or the ends of the branches where they congregate may be cut and burned. The same remedies hold good for the spotted beetle, but his favourite place of hiding is in the berry, so these should be cut and burned as fast as they form.

CABBAGE

It is perfectly appalling the number of cabbages consumed in one year by the population of a small corner of our great country. A crate of cabbage holds about seventy-five heads. Count the leaves on these and then think of the number there are in the hundreds, even thousands, of tons used in and around a great city like New York.

I don't think cabbage is a popular garden vegetable. People seldom give it room, presumably because it can be bought for such a small sum, but I shall never forget my surprise when I tasted the first cabbage out of our own garden, plucked and served at once. It did not seem possible that there could be such a difference of flavour and crispness in the home-grown heads.

If you want very early cabbage, plant the seeds in the hotbed in February, allowing for as much air as possible so that they will not grow too tall and spindly. If you want early cabbage, the seed may be planted in a sheltered and well-prepared seed bed in the garden, at the end of March. The seedlings will be ready to set in the garden in May. Late varieties should have the seed planted about the middle of June. These seedlings will be ready to go into their allotted place in the garden in July, making fine, large cabbages for November. If the seed be sown out of doors, the drills should be made twelve inches apart. One foot of drill will probably give you fifteen to twenty seedlings, so that you can estimate the number of plants you need and sow the seed accordingly. The seeds are round, hard and brownish in colour, and should be planted one-half of an inch deep.

It is really foolish not to have a few heads of late cabbage, unless you distinctly dislike it, or do not care to fight the cabbage worm, for this coarse, large-leaved, green, American beauty is the one thing that can be kept through the winter with ease. You see the late varieties are set out in July, when there are three or more places left vacant by lettuce, radishes, early peas, etc.

When the seedlings are ready to be set into the garden, it is well to cut off a part of the leaves to check upper growth until the roots become re-established, but care must be taken not to mutilate the young central or crown leaves. Plant them deep, so that they may have a good foothold to

support the head, which weighs several pounds when ready to cut. Of course you know a head of cabbage is nothing in the world but leaves wrapped tightly about each other, and, if the plant is not winter-killed, this head bursts in the second summer, and a tall flower stalk, three or four feet high, bearing yellow blossoms, comes out of the centre.

There are three distinct varieties, namely, red, smooth and wrinkled. The red ones are handsome, having shades of purple on the outer leaves; the smooth are those usually grown, being larger and heavier than the wrinkled variety, although this last (Savoy) is extremely fine in quality. They are gross feeders, need plenty of manure, and a little chicken-house refuse will suit them. Transplant them on a cloudy day, if possible, but if fortune does not favour, wait until toward evening to do your planting, and shade the plantlets the next day without fail, after which they will be pretty well able to take care of themselves.

Their enemies are cabbage-worm, loopers, flea-beetle, black-rot and club-root. Arsenical poison should be used for the first two, as I described in Chapter VI. Spray either with Bordeaux mixture and Paris green, or with Paris green and flour, sprinkled dry, or with the resin and lime mixture. The last is by far the best. Club-root must be starved out of the soil, therefore you should not attempt to grow cabbage or cauliflower for two years or more, if this disease develops in your garden, the only remedy being the evil-smelling carbon bisulphide. Black-rot starts on the outer leaves, turning them yellow, and eats its way into the heart of the plant. Destroy the leaves by fire, as soon as you discover that they have been attacked. If the rot has reached the stem, it is wiser to destroy the whole plant. Should this unpleasantness develop among your cabbages, examine them carefully before storing for winter. Black threads in the fleshy part of the outer leaves indicate its presence, so beware!

The head is ripe for culinary uses when it is large and firm. Soft heads, or those that have the leaves folded so loosely that they yield when you press them, may be used for the winter's supply as they will harden in storage. This hardening is really an expansive growth of the inner leaves to fill up the space. Cabbages stand pretty cold weather, so you need not think about storing them until Election Day comes. Then, if you wish to keep them only a short while, say until Christmas, they may be taken out of the ground, placed all in a clump with the roots to the centre and covered with hay, straw or litter. If you wish to keep them longer, or to be more sure of their safety,

dig a trench one foot deep, cut off the loose outside leaves of the cabbage, put them in the trench, heads down and close together, cover them over with earth, and, as the weather grows colder, pile on salt hay, straw or litter. If



A cabbage making believe it is a Brussels sprout

you wish to be very nice about it and to keep the heads clean, first line the trench with salt hay, put a little over the plants, and then pile on the earth. Cabbages would much rather be too cold than too warm, so do not start to cover them either too early or too heavily.

The cabbage is a native of Europe, and in its natural state grows three or four feet tall, the dense head of leaves being a development of cultivation. The housewife would scarcely know how to get along without cabbage, for some of her most delicious pickles have it for their foundation. Everyone knows it as a salad, or cold slaw, made by simply shaving the leaves fine, across the grain and using it with any salad dressing, preferably with one containing a good deal of mustard.

A delicious pickle, and one that is easily made, requires one head of cabbage chopped fine, and sprinkled with two tablespoonfuls of salt. This is allowed to stand one hour. Chop finely one green and one red pepper, seed and all. When the hour is up, drain the cabbage and you will find that a good deal of water has settled into the bottom of the bowl. This salting is supposed to extract some poisonous quality from the cabbage, and if this is a scientific fact it is hard to see why we do not all die when we eat cold slaw. However, salt and drain it you must, and get out all the water you possibly can without crushing the cabbage; then, and not until then, add to it the peppers, together with one tablespoonful of mustard seed and one teaspoonful of celery seed. Mix well and put into a stone crock, glass jar, or what you will, pouring over the compound enough vinegar barely to cover it. This

relish does not need to be sealed or cooked, and I think it fit for a queen. If you come from Philadelphia, I need not tell you that its name is "pepper hash." If the cabbage you used was a good-sized one, this quantity of material will fill two quart jars.

There are innumerable pickle recipes that require cabbage, and no doubt you have your favourite. Everyone has heard of saurkraut, even if they never tasted it. I must confess I never have, though I live near a number of "kraut" factories. It is fermented cabbage, and that does not sound as if it could possibly be good. On a small scale it is made in this manner: An oaken keg has the bottom covered with cabbage leaves over which is put a layer of finely shredded cabbage. This is pounded down tight with a wooden potato masher, and then sprinkled with a little salt—another layer of cabbage, more pounding, further sprinkling of salt, and so on until the keg is nearly full. Cabbage leaves are spread on top, a cloth is then laid over the whole with the corners coming over the top of the keg, and, lastly, a loose circular board is placed over the cloth with a heavy weight on it. In two days the water should be showing above the cabbage. The weight and the board are then removed, and the cloth taken off carefully, for, if fermentation has started, the ferment has risen and is clinging to the cloth, which should be washed in several waters. Then wring dry and replace, with the board, weight and all. Repeat the process in two days, and, if the water has not risen, add just enough to show above the kraut along with salt enough to be noticeable. When fermentation ceases, the kraut is done and ready to be stored away in the cellar. It should be kept moderately warm while fermenting. In the factory where it is made on a large scale, the shredded cabbage is handled with a pitchfork, and thrown into a large tank, where it is trampled by a man in rubber boots (of course they are clean). When salted, and weighed it is allowed to remain there until fermentation ceases, when it is packed in barrels ready to ship.

To prepare for the table, it should be washed thoroughly in several changes of water; then allowed to soak one hour in ice-water, drained, and eaten with French dressing. This is known as sauerkraut slaw. To be served hot, it should be well washed, then boiled for half an hour and thoroughly drained. I find sixteen recipes in one cook book for preparing cabbage, and some of them sound very attractive, while others, principally the foreign modes, do not. Red cabbage is seldom used except by those who like German dishes. We are fond of it once in a long while, if shredded

fine, and cooked in a hot frying pan with two tablespoonsful of vinegar. The pan should be kept covered, and the cabbage tossed occasionally, allowing it to cook until tender. Savoy being a loose head, is as a rule stuffed with rice and chopped meat, highly seasoned, boiled until tender and served with cream sauce. This would make a fair meal in itself, it seems to me. As for plain, boiled cabbage, eaten with vinegar, or with drawn butter to which a little vinegar has been added, or none, as one prefers, it is a pretty good dish, especially, as I said before, if the cabbage is freshly plucked from your own garden.

Cabbage, like all other good things, is considered by some people to be extremely indigestible, and worse when cooked than when uncooked, but some authorities claim that if, after plunging it into boiling salt water, it is allowed to cook uncovered, it is quite as digestible as when eaten raw.

I am not going to tell you what varieties to plant, for each locality has its own favourite. For an early crop many use the Jersey Wakefield, and for winter the Flat Dutch Head, and these are the most popular.



Seedling of the Georgia collard

COLLARDS

Georgia collards are very closely related to cabbage. The leaf is nearly the same as the outer leaves of a cabbage, but no head is formed. It is raised a great deal in the South, where the climate is too warm for heading cabbage, and it is always boiled. The flavour is the same as that of cabbage, but it should be cooked as you would cook kale. One might think it had been boiled with fat meat, it is so smooth, almost greasy. Very little of it is raised here, as cabbage takes its place, though the seed can be planted and the seedlings cultivated like those of late cabbage. Seed was sown in my garden June 23, and within four weeks the plants were large enough to be

set out, one foot apart in the rows. They make a pretty bit of green in the fall garden, and would certainly seem good, if there were not so many better



Brussels sprouts, or baby cabbages

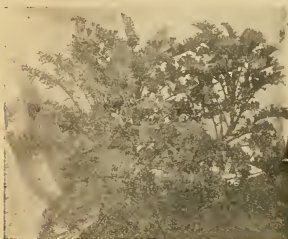
things. However, if you are a lover of boiled greens, by all means have this, as one of the "fifty-seven" or more varieties.

Its enemy is the cabbage-worm, but no serious harm was done to my plants, as the young, tender leaves, which we used, came up after the pest had been fairly well banished. It seems to stand frost first rate, but whether it will stand freezing or not, remains to be seen. It has no particular food value, and being a good green is its best point. The blossom comes the second season.

BRUSSELS SPROUTS

Brussels sprouts are miniature cabbages. This species of the cabbage family grows in small heads upon the tall stem of a plant surmounted by a tuft of leaves. The tiny cabbages, formed at the base of each side shoot leaf, are gathered when about two inches in diameter. The seed should be sown like late cabbage, in June for our Northern States, as the vegetable is coveted during the late fall and winter. It is said that light freezing will not hurt the plant, and it frequently is left standing in the field until well into the winter, apparently suffering little, if any, injury. The plant survives the winter without much protection. It is a biennial, and the second season's

strength goes into the blossom. The plants may be set one foot apart, perhaps even a little closer, for they grow tall, rather than stout. They require rich earth, and must make a rapid growth to attain their best in flavour and texture.



The Staghorn Fern kale

I shall have to find out for myself, in my own garden, the many eccentricities of this curious little cabbage.

It is a vegetable seldom seen except in those markets which cater principally to the German trade, but it is much prized by investigating natures who have a liking for cabbage. A good method of preparation for the table is as follows: After trimming the sprouts neatly, place them in cold water for an hour, then throw into boiling salt water, and cook gently

until tender (about thirty minutes). Drain, cover with cream or Hollandaise sauce, and serve. They are a bright green when done, and if they come out a faded colour, they have been overcooked. Melted butter may be used in place of a sauce, but most tastes incline to the latter.

The three vegetables just discussed have no particular food value. They are merely additions to the list of garden greens, and have all a slight medicinal effect.

KALE

There are several cousins of the cabbage, cultivated in about the same way. One is kale, a cabbage without a head. The plants are very beautiful, especially those with a purple tinge in the stem and midrib, and a variety we call the maiden-hair fern, whose leaf is symmetrical and so deeply indented that certain lights bring out the fancied resemblance. For cooking, the leaves are gathered, and placed in a tightly covered kettle to draw the juices out; then boiled until tender, and served with vinegar. The flavour is very much the same as cabbage, though the texture is slightly smoother.

For early spring use, the seed should be sown in September, one inch deep, transplanted to one foot apart, and protected slightly during the winter. I sowed seeds of Siberian kale toward the end of April, and had plants large enough to be cooked early in July. The ones not cut down are beautiful

in the late fall, and it is said they are not injured by freezing, but will stand out all winter, and produce greens in the early spring again. There are seven or eight varieties of biennial kale offered by the seedsmen, besides sea kale, which is a perennial, though its leaves show deep dejection after the first hard frost.

The striped and variegated kind is one of our "flower vegetables," raised for its beauty as a garnish only. Out of the one package of seed thus named came four distinct types of plant. One we have dubbed the Prince of Wales, for the leaves grow on the top of the stalk like a Prince of Wales feather. Another has been nicknamed the "Staghorn Fern," for the leaves are most artistic in their cutting and frilling, their silvery purple midrib and their veins. The others are just kale, beautiful too, and resembling the "Fern" more than the "Prince," for their stems and veins are also purple. Even parsley cannot excel them as a garnish, for, given a craving for something uniquely decorative, they certainly "fill the bill."

Sow the seed in April; when good and sturdy transplant to a permanent residence along the fence, make a path border of them or place them one foot apart in an out-of-the-way corner, where the young leaves may be gathered for a garnish, and will also make a beauty spot throughout the season. You will have no regrets until the cabbage-worm finds out the plant and shows his fervent love for it by many circular bites. Treat this destroyer as you did when he attacked the cabbage—with Paris green, Bordeaux, or salt. The blossom does not come until the second season.

Sea kale resembles asparagus as a foodstuff, since the young blanched shoots are used in the early spring. It may be propagated by seed, or by division of root. I sowed the seed in April, transplanting them on the first of June, to one foot apart. Two feet would have been better, for they spread out a great deal. I am instructed by garden-loving experts to



Sea kale in the fall of its first year

bank loose earth upon the crown next spring, and to cut the young shoots when they appear, as I would cut asparagus, cooking and serving them in the same way. On the other hand, the roots may be lifted, placed



Snow-covered kale, the green leaves frozen stiff, that garnished our Christmas turkey

in moist soil and set in the dark, where the young shoots will appear, and grow white and tender. A moist atmosphere must be maintained and a mushroom cellar is a capital place in which to blanch or force sea kale.

When the shoot cutting is finished, and I imagine it does not take long, as little can be garnered from one stalk, the earth is removed and the plant allowed to grow for the remainder of the season. A dressing of manure in the fall will improve their health so they shall have it. You see, I have barely been introduced to this new acquaintance, though I have great hopes of forming a warm friendship. Other kales I have not raised, as we care for few boiled greens, and spinach is our favourite.

Kale cooked in asparagus fashion assuredly sounds very attractive, and I think the Siberian kale, now freezing in the garden, will have to be treated that way in the spring, that is, boiled quickly for half an hour in salt water, with the leaves tied together in bunches. When done, the bunches are to be lifted carefully from the water and placed on toast; the strings cut without breaking the leaves and a sauce poured over them. The sauce is to be made

as follows: Rub one tablespoonful of flour and one of butter together until smooth; add one half pint of the water in which the kale was boiled, and boil a minute longer; then add salt, pepper and the juice of half a lemon.

ORACH

Another plant used as a boiled green has not received a very warm reception in our house, although so easy of culture, and that is orach. I planted both the white and red, but the latter stubbornly refused to germinate, no matter how often or how carefully I sowed its seed. The white variety germinated six days after it was sown in the latter part of April, and the light-green, rather pretty leaves were ready to cut by the eleventh of June. Shortly after this date, it shot up very tall and rank, and showed insignificant, yellowish-green flowers along the stem.

The flavour, when boiled in its own juices, is a good deal like spinach, but decidedly ranker. I do not think it will ever become popular in the average American family.

In this same category comes purslane, or "pusley," as we call it when we fight it tooth and nail in our gardens as a weed. The French, however, are very fond of it, and have developed the ordinary, trailing, crawling creature into a fleshy, upright plant. I have never raised it, except to yank it up, root and all; and I am afraid to plant it, after the threatening look on the face of the Man from Out West, when he discovered an assortment of dandelions in the garden, each variety carefully labeled and nurtured.



White orach seedling, showing frosting on underside of leaf

DANDELION

A decided howl went up from the other half of our gardening committee when he went through the garden last spring and found dandelions growing in sedate rows, dignified by markers.

"The idea of your raising dandelions in the garden of the back yard, while I am sitting up nights to get rid of them in the lawn of the front yard!"

"Never mind. I promise to let none of them go to seed and escape."

"But what in the world are you raising them for?"

"You know very well you love dandelions in the spring, so I thought I would raise a few nice, big, juicy, fat ones for you."

"But you have three kinds here. I didn't know there was more than one—the plain, unexpurgated dandelion."



The dandelion's gorgeous blossoms

"Well, wait until next spring, when I have them nicely blanched, and see which kind you prefer, the Arlington, the French or the Broad-leaved."

"But what do you want them blanched for? You just take a knife, cut off the green leaves and boil them."

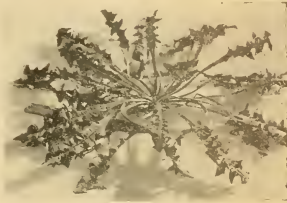
"I am going to treat you to dandelion salad."

"Well, suffering jack-rabbits! It strikes me as weird as your silver-haired thistle."

There has been a silent contempt in the air every time I did anything

to those plants, but they are now fine, large, handsome fellows, ready to have a light overcoat of salt hay in the middle of November. The seed was planted April 24th, came up in sixteen days, and the thinning took place June 7th to six inches apart. In the spring I shall blanch them, either by placing boards on top or by taking them up, and putting the roots in sand in a box, to keep them in the root-cellar. Yes, I think I will decide on the root-cellar, for then more room will be left outside for spring sowings.

The Arlington is broader, larger and handsomer than the large-leaved; and the French is the most finely cut. we shall want next spring, and that they will be so much better than unculti-



Arlington dandelion ready to winter over

I hope they will give us the bitters put upon them. Unblanched, and boiled as "greens," at a time when we all crave green things and a bit of bitter, the dwellers in the Italian settlement know their value. Cut the leaves off just where they come out of the ground, wash thoroughly and pull apart; put into a tightly covered kettle, heat slowly, then boil until tender; drain in the colander, chop finely, salt, and serve with vinegar. The slow heating draws out the water that is in the plant, while quick heating would burn them, as well as the kettle, before the plant liquid had a chance to escape. In the West, the roots are dried, and, when mixed with roasted wheat or barley,



French dandelion seedling

make "poor-man's coffee." The dried roots are also used medicinally.

I think dandelion is a perennial, or "never-ending enial" if it is in the

lawn where you don't want it. We always allow one or two to remain because we could not get along without their gorgeous gold, and as for the children, they had a genuine plant-lover's fit over some they discovered in October.

"Why, mother, they didn't know any better. They must have thought it was spring. You'd think they would look at the trees and see the leaves falling down and know it was fall," said our biggest girl in great disgust at the dandelion's ignorance.

It is a "furriner," much loved by the French and Italians. The latter spend days collecting dandelions, often going long distances into the country to gather them. The bitter in this vegetable is extremely good for the liver, and a natural tonic for the housed, superheated, oxygen-lacking human beings that exist and multiply in spite of the scientific inventions and marvellous appliances designed to reduce life to a purely mechanical and automatic basis.

DOCK AND SORREL

The Man from Out West is very fond of bitters in the spring. Shall I "run in" dock, "unbeknownst," I wonder! It is a perennial, and the leaves are ready to use early in April. Professor Bailey says he has grown two French docks—spinach and large Belleville—and he enjoys them very much. I don't care for bitters, and these do not sound in the least attractive. If this wild and woolly Westerner wants them he will have to raise them himself.

Sorrel is the sister of dock we call sour grass, and we sigh when we see it appear uninvited in the garden, for it denotes a sourness of the soil, the antidote to which is lime. Some people raise it as a vegetable, but it seems to me they must be hard up for something better. We at least shall leave it to its natural duty in the vegetable manufacture of oxalic acid.

MUSTARD

Mustard is an edible leaf much coveted by the negroes in the South. "Mustard biled wif poke" is just about the finest thing they have. I must confess it is rather good, boiled according to my previous directions for dandelions, and, when it is chopped fine, it may have a little salt, pepper and butter added, also a hard-boiled egg, cut in slices and laid on top. Served with vinegar it is tender, piquant, not at all biting, and we enjoyed it as a salad last spring, for it was ready to be eaten by the fourteenth of May,

the seed having been planted on April 21st (only twenty-three days). Lettuce needed thinning and cress was ready, so I lined a plate with young lettuce leaves and placed in the middle a tomato that had been skinned and the stem end removed. Sprigs of cress encircled the red fruit, and a tuft of fine young mustard leaves was placed in the hole where the tomato stem had been. A four-leaved clover in the centre of the mustard, raised sufficiently above it to show the form, completed my "four-leaved-clover salad." Served with mayonnaise dressing, it was "bully," as the masculine members of the family expressed it.

The seed can be sown thickly in drills, barely covered with earth, as early in the spring as the soil can be worked and the "thinings" used in salad or boiled. If you wish more of it, the seed may be sown broadcast in a bed, which is raked afterward to cover the seed with earth. I remember once having a coloured "mammy" who begged to be allowed to sow the entire garden with mustard in the fall, promising to have it all out before we needed the ground in the spring. I compromised and gave her half the garden. She sowed (I speak correctly this time) the seed in the late fall and the seedlings came up very early the next spring. How she did revel in that mustard! As a special favour I ordered a hog's head from the butcher, and she thought she was "mos' in heaben."

The Englishman raises his mustard in company with cress, a row on each side of the mustard, and when both plants are large enough, he cuts the top leaves off with a pair of shears, leaving enough to start a second growth. I think that must make a pretty "peppery" salad, which would not do for some Americans I know, whose natures are already sufficiently high tempered.

It blossoms early in the summer, and should not be allowed to go to seed, for it will soon become a weed, reverting to the wild mustard that is such a nuisance to the farmer. The blossom is bright yellow.

I was amused watching one of those made-in-a-hurry homes this year, where the people bought the land, made a garden first, and then built a barn to live in until they could erect a house. I loved them for the sequence followed in starting their home and for their spirit in housing themselves in the barn, for so did my great-grandparents, when they came from England at the age of fifteen. The garden was fenced in, laid out in paths, planted with numerous kinds of vegetables and with nasturtiums, as a finish, along the fence. One day later in the season, as I drove past, I noticed that the

place did not look so well, and the next time chance brought that garden into my view it was one large plantation of flourishing, happy, wild mustard in full bloom! I wonder if those people knew what they were about when they allowed that weed to go to seed, from which the entire neighbourhood will reap the reward, or curse, for years. If they were busy housebuilding, they might at least have cut off the blossoms, burned over the land, done something, anything, to check the mad career of propagation.

The powdery flour of mustard, that comes in small tins, is made of the seed, but it is seldom unadulterated. Mrs. Rorer says, "Never use it," because a mayonnaise dressing is made utterly valueless when it is incorporated with the compound. Well, well! I was brought up to think mustard half the dressing.

CHARD AND ORNAMENTAL BEETS

A distinct variety of beet leaves, eaten as a boiled green, is called Swiss chard, though some people use the leaves of the red table beet in the same way, and both are extremely popular in the country.



The dracena leaved beet—a fibrous, woody root

The seed, or, to be more correct, the fruit—for what seems a seed is a hard shell containing two to five seeds—should be sown in the early spring, about one inch deep, as it needs moisture to soften the outer shell and allow the seedlings to come out easily. When the plants are well up, they may be thinned from time to time and the thinnings boiled in the same manner as kale, or set out in the garden, for, strangely enough, they transplant well. The plants left to mature, which they do in the late summer and autumn, should stand about ten inches apart. The leaf is beautiful and broad, pale green

with a thick, white satiny midrib. There is no fleshy root, as in the case of other beets. I cannot say that we enjoyed them as a boiled green, though

we have friends who consider them delicious. They are very tender, but the flavour is insipid.

There are two other kinds of beets that are not beets, from an edible point of view, but I mention them here because they are a beautiful addition to the vegetable flower bed. The Brazilian variety has two distinct leaves, one crimson with a scarlet midrib, the other green with a crimson midrib. The other variety is known as dracæna-leaved, and it is fully as beautiful as coleus. It is a rich crimson, of dwarf habit, easily raised from seed, and stands quite a little frost, which cannot be said truthfully of coleus.

These two varieties of ornamental beets were planted in April with the chard, thinned slightly, then utterly neglected, and they have received no end of favourable comment from our friends and guests. Dracæna-leaved beets shall be among the flowers next year!



Like a mangel-wurzel, the Brazilian beet grows with half its root above ground

Beets are biennials, the flower stalks growing three to four feet tall the second season.

SPINACH

I remember the astonishment of one of our city friends when I showed him some spinach in our garden.

"Why I thought any old leaves that you cook were called spinach."

"Indeed not," said I. "There is spinach *and* spinach, and the very best I ever tasted is called prickly."

Both the prickly and the New Zealand varieties grew in our garden this summer. They differed so widely one could hardly believe they belonged to the same family, and, as I understand it, the latter is not a true spinach.

There are two seasons in which to gather this vegetable, one is the early

summer; the other, the early spring. For summer use, plant the seed as soon as the ground can be worked, giving the roots some chicken-house refuse, if you have it, or if not, using nitrate of soda, when the plants are well started.



Prickly spinach is so called because of its seed; its leaves are oddly warped

Plant the seed in drills, not too thickly, for the plants are large, and bury the seeds one inch deep.

Our prickly spinach seed was sown the end of April, though the ground was ready before that time. It germinated in eleven days, and in five weeks the row was thinned, the stockiest plants being left. I was surprised and amazed, likewise charmed, to find that these thinnings from three feet of seed sown gave me nearly one-half a peck of fine greens.

They were prepared for the table carefully, washed in several changes of cold water to remove all sand and grit, then packed in a kettle, covered closely, heated slowly until the juices started and then boiled hard for about an hour, or until they felt tender when tested

with a fork. Drained well in the colander they were chopped fine, and then turned into the frying pan, which had in it one tablespoonful of melted butter. Here the spinach was tossed and stirred until the water was steamed out and the butter thoroughly incorporated. Served with drawn butter, in which a little vinegar had been stirred, or with vinegar alone, it was just about as pleasant as anything I ever ate, and I am no spinach lover. The Man from Out West asked for more, which was highly complimentary, as he rarely follows the historic precedent of *Oliver Twist*.

In her new cook book Mrs. Rorer gives a very nice recipe for spinach, served in Spanish style. After it is boiled, make a sauce of one tablespoonful of flour, one tablespoonful of butter, one-half pint of chicken soup stock,

one teaspoonful of salt, one saltspoonful of pepper, a grating of nutmeg, two cloves and one tablespoonful of onion juice. This sauce is strained over the spinach, which is served smoking hot. It sounds delightful, and shall certainly be tried next summer.

Two more pickings came from this three-foot bed.

For early spring use, the seed should be sown in August or September. When freezing weather comes, it should be protected with several inches of hay, and then the leaves will surely start to work at the very earliest sign of spring.

If it happens that more important matters prevent your making the fall sowing of spinach seed, you may, if you have a partially protected border, plant them in February. This seems remarkable, for how in the world can a seed germinate and grow with the thermometer hovering between zero and thirty-two degrees? Perhaps it lies dormant, not minding the cold, and wakes into life when the spring first opens. These seeds and seedlings surely need a light protection of hay. I should feel like a murderer if I left them shivering in the frozen ground.

The flower stalk grows about three feet high, and the blossoms which come where the leaf joins the stem are so tiny and insignificant that one has to hunt for them. The prickly spinach seed has sharp points, hence its name, and this variety is considered the best to winter over, while the "long-standing" is certainly the best for summer use, as it does not go to seed quite so rapidly as the prickly.

When the plant is not pulled up bodily while thinning, the leaves are gathered by cutting them off at the earth surface. Spring-grown crops should



A spike of prickly spinach

always have the outer leaves taken off, and the young ones in the centre left for successive cuttings. If you have much of this work to do, a sharp hoe is a good thing to use.

We were surprised to find on the blossom stalks of one plant two distinct types of leaves, which the photographs show very plainly.

The New Zealand spinach was planted the same time as the prickly, April 25th, after the seeds had been soaked over night in warm water. The seedlings came up fifteen days later, and the first crop was gathered by thinning, June 21st. As the prickly was gathered June 7th, this variety makes a very good companion crop to fill in gaps.

It was cooked and sowed the same as the prickly variety, and was even more delicate, lacking the tough stem and midrib that usually attends spinach. The flavour was more like that of dandelion, without the bitter quality. We were extremely pleased with it, and it deserves to become more popular, for



Ordinary winter spinach

it endures the hot weather. The leaf, which is smaller than other spinach, is covered with a silver frosting that makes it very attractive, and the blossom stalks lie along the ground, instead of growing upright. The blossom is almost identical with that of the prickly spinach, but the seed differs in being smooth. Liquid manure is a fine thing for the spinach crop, and the quicker the growth, the more crisp, delicate, and better coloured are the leaves.

I doubt if this variety could be wintered over, but it is worth while trying, I think. To do this, the seed should be sown in the late summer, and protected like other spinach with hay.

BORAGE

This plant is one of my pets, not on account of its edible possibilities, but for the beauty of its *tout ensemble*. I have heard that the leaves are sometimes boiled, but they are so very hairy that this method of preparation seems decidedly uninviting, though I shall certainly try it next summer.

The leaf is used principally in such compounded thirst quenchers as sauterne and claret cup, or in any other way in which cucumber is used as a flavouring, for the taste of this leaf resembles the flavour of that much-maligned vegetable in a truly remarkable degree.

It has a symmetrical, compact growth; the leaves are broad, deeply veined and hairy, and the wonderful profusion of true-blue flowers from which inky black stamens project make it a strikingly unique and fascinating plant. The seed self-sown from the planting germinate and appear in eleven days, and somehow it doesn't make you at all angry, when it comes up where it has no business to appear, for its robust growth, its pleasing whirl of young leaves are truly delightful.



Borage ready for cutting

To have handsome plants, sow the seed the end of April. Six inches will give you plenty of seedlings, unless you intend to use them as boiled greens. Transplant in about three weeks to one foot apart. This plant would be beautiful for the centre of a radial garden, particularly if a second planting was ready when the first was done blooming. The early planting blooms June 20th, so you might sow a few seeds in the house, say the first of April, simply to get them into bloom earlier. The second sowing could be made when the first plant begins to show buds, as it would then be ready when the first had ceased blooming, but I really do not know when the first sown should cease. I was obliged to pull mine up, after I had tested them, in order to make room for corn salad. One thing I do know, a seedling dropped from these plants was in bud the first of November! I think I shall take it into the window garden to give us a bit of blue until hyacinths arrive.

PARSLEY

Parsley is one of the leaves it would be difficult to do without. It holds first place among the garnishing plants, presumably because of its ease of culture and its beauty. It blooms the second season and will stand our winters with a good protection of brush, straw, salt hay or litter.

My parsley is now done, as it was sown last year and bloomed this. The plants were covered with salt hay all winter. Next fall, when I have some

good one-year-old plants, I shall take a box, knock out the bottom, place it over the plants, bank a little manure around the outside and cover with glass. This will save lifting the roots and placing them in the coldframe, with the consequent wilt and revival, and it will also give me more room for early spring-sown seeds in the coldframe. Instead of keeping the green, though dormant, plant through the winter, it may be gathered in the autumn, dried in the sun, powdered between the fingers and stored away for future reference.

The seed is very slow to germinate, but it can be soaked in lukewarm water a few hours before planting. Sow in drills in a protected spot, preferably in a border (mine always edges a flower bed), as early in the spring as the ground can be worked deep and fine. Cover the seeds one-half inch

and firm the earth well over them.

A slight covering of grass or hay will help to keep the earth moist while the seed is germinating. This should be removed when the plants are large enough to be worked, and thinning should take place when the second leaves are well started. If you want fine, showy plants, thin them to four or six inches; but if you just want



Against chervil and ornamental kale ordinary parsley must look to its laurels

“parsley,” that will grow with little or no care.

There are seven or eight varieties offered, but I have usually grown the moss-curled, though I think I shall try the fern-leaved next year to see how they differ.

The culinary uses are two: garnishing, when it merely ornaments the food upon a platter, and flavouring. If you care for the taste, it is an extremely healthful green to be eaten with the food with which it is served; and, as a flavouring it is used in soups, stewed potatoes, croquettes, hash, etc.

The blossom is white, resembling that of the wild carrot, often called Queen's Lace. It has never been injured in any way by insects or by fungi in our Long Island gardens, and we have grown it a good many years.

CHERVIL

Parsley naturally leads one to think of chervil, for this plant, though little grown, is also an exquisite garnish. The leaf is very fine and delicate.

It is sown and raised like parsley, and varies only in being an annual, producing blossoms and seed in midsummer, dying quickly thereafter, and almost magically reproducing itself by self-sown seedlings.

The seeds of the plain and curled varieties were sown in my garden April 22d and 24th. They took sixteen and seventeen days, respectively, to germinate and were ready for use in five weeks. Two weeks and a half from that time they were in bloom, and then, presto! they were gone. Their seedlings are beautiful in the garden now, after heavy frosts, but as the flavour of the plant is sweet and sickish, personally I would never give it room, certainly not as a rival to parsley.

If you like it enough to preserve it, cut it just before blossoming; tie it in bunches and dry in a warm room or in the sun. When it will powder between the fingers, it is ready for use. The blossom, delicate and white, comes the latter part of June, but the dying and dead plant is what I call "dirty." It is unsightly, as few flowers are. I do not think one could choose between the curled and plain, as both are beautiful.

LEEKS

When one comes right down to fine botanical points, the leek must be classed with celery and rhubarb, for it is not the roots but the blanched stems that are eaten. Leeks are rather pretty things to have in the garden, with their long, flat, silver-green, drooping leaves; and a member of our family is very fond of them, though he declares I never let him have either these or raw onions. Well, if that is true, there is a reason.

Leeks are raised from seed sown in the early spring and buried about one-half an inch. The seedlings must be transplanted, when about six inches high, set three or four inches apart, and covered very deeply indeed, as the end of the stalk near the root must be kept from the light. A good plan is to make a deep hole with the dibber, set the plant into it, and do not fill up the space about the stem to the surrounding level, but leave a hollow around the stalk. Fill this hollow, as the plant grows, finally hilling slightly. Again, a trench may be dug, six or eight inches deep, several inches of well-rotted manure placed in the bottom of it, the plant set in deeply and the trench filled up as they grow.

It is recommended that a portion of the leaves should be cut off before transplanting to check their growth, while the roots are becoming established in their new home. I did not do this with mine, and whether or not they



Carentan leek seedling, with seed-hull on tip of leaf

soil more favourable than that in which the carentans grew. As far as the leaf is concerned, the only way to tell them apart is by the slightly bluer shade in the green of the carentan.

Though they belong to the onion family, chives are in the leek class, because the leaf only is used. The plant is propagated very easily by a division of roots. It appears early in the spring, and the leaves may be kept cut about an inch from the ground all summer, as they will bob up serenely after each cutting. When autumn comes, one of the dense clumps in which they

would have been larger and handsomer if I had, only a person of long experience can tell. They must be kept well cultivated, however, and the earth drawn up around the stalk each time they are hoed. It takes fifteen days for the seed to germinate, and about five months for the plant to reach its prime. The stalks may be eaten raw, or used as flavouring. Sometimes they are boiled and served with cream sauce. The old English dish, "cockaleekie," is chicken broth, thickened with leeks. The plant is crisp and firm in texture, and mild in flavour.

Two varieties honoured our garden this year, carentan and American flag, the latter being the finer, though this may have been due to some accidental condition of the



Chives, a delight to the housewife

always grow may be lifted, placed in a pot, and kept among the flowers of the window garden. A bed will last several years, and the leaves afford a delightfully mild onion flavour to edibles. A small tuft of them, chopped fine and added to mashed white potato, gives it a distinctively foreign taste. This is a stranger whose acquaintance is well worth cultivating.

HERBS

Other leaves we eat are the sweet herbs necessary to most housewives for "stuffings," as we usually call the flavoured dressings for meats. What would a Thanksgiving turkey be without its highly seasoned dressing? "Hamlet" without Hamlet. These herbs can all be grown in the garden, if given a corner to themselves, where they can thrive and be happy. So seldom are these piquant, flavouring plants grown in this canned-goods, ready-made, prepared-in-a-minute era, that only a brief description and general instructions are called for; but, if the space is yours, and you long for the old-time twang, plant at least the most valuable, and renew your youth.

Catnip is now seldom used as a seasoning, though it played an important part in grandmother's medicine chest. Who does not remember catnip tea? There is little need to grow it in gardens, for it is a common wayside plant, with its tiny blue flowers tucked away among the leaves. How the tabby cat loves it, and what sprees that family friend enjoys in partaking freely of the leaves!

Lavender is still grown for the perfume exhaled by the blossom. Its fleeting daintiness was once highly valued, and little lavender bags were always found among the kerchiefs of the stately maids and matrons of colonial times. It is generally propagated by a division of roots.

Peppermint is increased by a division of the stems. Do you want it in your garden? Well, that depends—there are many people who never even heard of a mint julep, but there are others who claim for that beverage tonic and cooling properties of inestimable value.

Sage is lovely, with its tiny, bluish-white flowers and pretty silvery leaves. It grows readily from seed, if sown in the spring, and will stand our winters with a little protection.

Sweet basil is seldom used except in France, but it can be grown here also from seed sown in the early spring. It is an annual, and in its native country, India, it was held sacred in by-gone ages, being credited with many magic powers.



Our sage bush after yielding three families a year's supply

if you are fond of mint sauce with lamb or mutton. To prepare this sauce, pick green stalks, wash them well, place upon a board and cut as fine as you can by drawing a sharp knife across the leaves and tender stems. Put this in a small covered dish, such as a mustard jar, add a teaspoonful of sugar, cover with vinegar, place the lid on the dish, and in a couple of hours the sauce is ready to serve.

Summer savory is an annual, and must have its seed sown early in the spring.

All these plants may be allowed to remain where the seed are sown, and if given a good, rich bed, they will take care of themselves. Just before frost comes the leaves should be cut, tied in bunches and hung in a warm place to dry. Crumble these dried leaves to a powder between the fingers before using. The leaves should be stored in a tight receptacle, as the strength is lost to a great extent when they are exposed to the air.

Taragon, like spear mint, is one of the herbs worth having. It is a peren-

Sweet marjoram, spear mint and winter savory are all perennials, but need protection through the winter. Sweet marjoram and winter savory both come readily from seed, but spear mint comes from a creeping root which may be divided and set out in the spring. It needs no protection, for it grows as a weed in some moist soils, and can more than take care of itself, weathering the hardest winters. You certainly want a root or so of this plant,



A spray of sage hung up to dry

nial, needs slight protection over winter, and should be dried and kept in the same manner as sage. The leaves are used in flavouring salads, also in tarragon vinegar. To make the latter, cover one cupful of freshly gathered leaves



Spearmint cut for sauce: one can fairly smell its pungent fragrance

with a quart of good cider vinegar. It is wise to put this into a bottle, as it should be shaken frequently during two weeks; then strained and squeezed; then bottled and corked, and it is ready for use. It is extremely good in most of the sour sauces, especially those used on fish. The leaves are always used fresh in salads, and are generally combined with lettuce.

It is propagated by division of the roots, which should be set into the herb garden in the spring, and it is ready to gather for salad as soon as the leaves are large enough; and ready for drying in the fall.

FENNEL

The leaves of Florence fennel are used as a salad. We watched these plants come up and were delighted when they began to unfold their exquisite feathery leaves, knowing we should have a treat.

"Fennel! My grandmother had that in her garden! Like it? Of course, it is great! I'm glad you are getting some of the old-fashioned things into the garden; they take me back to my boyhood," said the Texan.

So I treasured the plants, thinking of the day when they would be large

enough to serve as a salad, and the joy I should have in watching that sublimely oblivious eater partake of it.



Roadside dog fennel

almost solid in its intensity, and we thought for a short time that we were "Johnny Jones and his sister Sue" of historic fame. The unfriendliness of those toothsome dainties of our childhood, the green apple and the unripe peach, faded away into insignificance.

I was horrified next day to find my two little girls each munching a leaf and saying they thought "fental" good. At their age we may have enjoyed it too, for it tastes exactly like licorice, only a trifle more sickish. It is grown, when grown at all, in the herb garden, but I can find no directions for its use, except as a salad. One of the numerous catalogues tells me that Florence fennel forms a head or enlargement at the base of the leaves, which is white, firm and sweet. The book also says that it is finer than celery, has a more delicate odour and a sweeter taste. I wonder what

That day came along toward midsummer, and the salad was beautiful. If I remember rightly, I combined tomatoes and lettuce, outlining the dish with fennel.

"Now," I said, "this is to take you back to your boyhood. Eat and enjoy!"

We ate and we went back to our childhood, both of us, though my grandmother did not have fennel in her garden, nor any garden to have it in, for she was a city grandmother.

A silence stole over us, a deep silence,



Yellow fennel blossom

went wrong with our Florence fennel that it formed no head. However, I am afraid it would not have made a better impression on the adult portion of the family even if it had headed, for we were unanimous, strenuous and loud in our disapproval.

The leaves are exquisite, and so finely divided that they remind one of the foliage of "Love in a Mist" and Cosmos. The odour, or flavour, is so pungent, however, that it transmits this quality even to the dish it may garnish. I think it is used chiefly as a medicinal herb, for we have all heard of fennel tea acting in that capacity. It is also extensively used by veterinarians. The common dog fennel, with its pretty, daisy-like blossom, is familiar to all country dwellers, and possibly it also is eaten by some of them. The garden fennel has a yellow blossom, displayed on a tall stem, and the seed head is rather pretty, as the photograph shows. It is a perennial plant, coming up from the root each year.

Considered an herb, fennel has the usual herb food value, i. e., none. Although I can say no good word for it as a vegetable, its beauty of foliage must certainly not be decried. Shakespeare makes it famous through the mouth of Ophelia, and as does Longfellow in the following lines:

" Above the lowly plant it towers,
The fennel with it's yellow flowers,
And in an earlier age than ours
Was gifted with the wondrous powers,
Lost vision to restore."

From "The Goblet of Life."

BURNET

Garden burnet is a pretty salad plant, requiring but little care, but it is likewise of little use. By this I mean that its flavour is insipid. The Texan says it tastes like "any old weed," and is not worth the time expended in sowing.

The foliage would be pretty among cut flowers, so if you care to raise it for that purpose, or to test for yourself whether or not it is good as a salad, sow the seed in April, thin out several inches apart when well up, and just keep it hoed. Whether it is a biennial or perennial, I cannot determine, for our American experts do not seem to include it in their books, and our cousins in England remark that it may be sown either in spring or autumn. Autumn is preferable, for the seed is liable not to germinate if kept over; and the plants

should be cleared of all dead leaves before the winter sets in. The flower stalk appears in July, and as mine did not flower last July, I am inclined to think it is biennial.

Across the water, Burnet is given an unshaded portion of the garden, in the poorest of soil, which, if not poor enough, has bricklayer's rubbish added to it. Would not this be a good plant for new-home gardens, where the rubbish is still lying around in unsightly piles? Englishmen use the leaves in "cool tankards" and in soups, as well as in salads.

ROQUETTE

If any one can give me either rime or reason for growing roquette as a vegetable, I shall be glad. It was one of our new acquaintances last summer, but we are not on speaking terms now.

The catalogues said, "Sow the seed in the early spring, and use the young leaves as a salad." I sowed the seed, as directed, and they were up in a hurry.



The banned roquette

"Easy of culture," I thought as I bent down to thin it out; "I wonder if it has any enemies?" I pulled out a few of the crowd-ers. Ye gods, what an odour greeted my nostrils! Well, the rest of the row was thinned with averted face.

In a short time, the young leaves being ready to use as a salad, I ushered the Man from Out West into the garden, put on my sweetest smile and most beguiling manner, then ventured:

"Be a dear and do something for me."

"In a minute, what is it?"

"Taste the roquette and tell me what you think of it," I said.

"That's easy; where is the croquette?"

"Roquette," I corrected; "it's a vegetable, not a concoction of meat. There it is."

"That queer-leaved thing! Look at the blossom (a few plants had entirely outstripped the rest of the row), isn't that weird? It's just like a Maltese cross."

He bent over, plucked some leaves and very politely offered me a few. What was I to do? I must have him taste them, and I did not want his suspicions aroused. "Take some of your own medicine," my conscience cried, so I held my breath while we simultaneously, he unsuspectingly, I with "a-burnt-child-dreads-the-fire" feeling tasted the salad plant. The dramatic fervour and oratorical vehemence of the climax will linger long in our memories.

Do not, I beg of you, raise roquette in your garden; it is not fit to associate with quiet, peaceful, dignified, stately vegetables of the truly edible sort.

CAULIFLOWER AND BROCCOLI

There are two vegetables unique in a certain way. The portion eaten of one is the flower bud; of the other it is the calyx surrounding the bud. The former is cauliflower; the latter, globe artichoke and in the case of both the leaves play a very important part in their lives.

Cauliflower is first cousin to the cabbage; in fact, it is difficult to distinguish the seedlings. They require the same rich ground, are sown in the coldframe or seedbox at the same time, transplanted together, require the same protection, and have also the same enemies. In this comparison I refer to late cabbage, as cauliflower requires cool weather and plenty of moisture, though there are in this, as in nearly all vegetables, extra early varieties. It is said that cauliflowers are never grown successfully in hot, dry portions of the country, but thrive best near the seaboard. We are in the cauliflower garden of this part of the country, for acres upon acres are grown



Cauliflower cut through centre. The black spot is rot, probably from the tying of the head while wet

on Long Island, particularly at the eastern end, where the air contains much salty moisture.

The seed should be sown in April, as soon as the ground can be gotten into good condition, and the shoots transplanted to the garden, in June, setting them two feet apart. Protect the seedlings from flea-beetles by dusting the plants with tobacco, air-slaked lime or ashes. As soon as the plants appear above ground, watch and forestall the cabbage-worm, by keeping the plants well sprayed with Bordeaux. It would pay to make the earth somewhat richer for cauliflower before set into the garden, than for cabbage; and a mulch of hay, straw or lawn clippings helps greatly to conserve the soil moisture. When the heads begin to form, the only way to discover them is to part the central leaves and reveal the small white flower bud in the centre. When the small leaves surrounding this blossom are parted, and the flower is visible without search, the time is ripe to draw up the outside leaves and tie them together at the top. The flower must not become sunburned or have

its beauty marred by dust or insects, but be kept secluded in the dark, where it will remain perfectly white.

Stop for a moment and consider what a task this whole process must be in a field of five or ten acres in which the flowers that are ready for tying are scattered, here and there, all over. How can the growers tell which plants should be gathered first? They use a different material or a different colour for each day's work, and a record is kept thus: First, tying raffia; second, string; third, rags; fourth, skewers. The last method may be followed entirely by bending the leaves over the top and pinning them together with a skewer, using a different coloured one each day. When the proper time

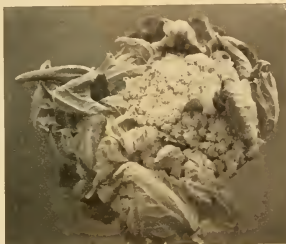


Cauliflower tied up to protect the head from sunburn

has elapsed for the plant to have reached maturity, which is easily seen by the full roundness of the leaf case, the heads are cut off, and the leaves sur-

rounding the flower trimmed down to display the beautiful white flower clumps, in a setting or edging of green. The plant stalks should then be pulled up and burned, for it is not wise to run any risk of flying pests, club-root or maggots being developed and spread, as would surely happen if the stalks were left standing.

Broccoli is a late variety of cauliflower, with heads not so fine and flowerets more distinctly separated. Little groups here and there throughout the head are surrounded by tiny leaves. The plant is taller and more robust than the cauliflower, but the flavour is the same. The seeds should be sown in April, and transplanted to the garden in June. The flowers will be ready to gather in October,



Broccoli, a handsome, hardy cauliflower

and are very welcome at the season's end. Some flowers of this type are also purple, though they become pinkish when cooked. Extreme care should be taken in preparing these vegetables, for, when overcooked, they lose their flavour and fall to pieces. Wash the flower thoroughly, trim off the outside leaves, tie it in cheesecloth and drop it gently into a large pot with enough boiling salted water to cover the flower completely. Boil a small one twenty minutes, a large one longer, remove it from the kettle as soon as tender, drain thoroughly, take off the cheesecloth, and serve with drawn butter.

Boiled cold cauliflower may be eaten as a salad with French dressing. Baked or scalloped cauliflower affords a grateful change from the usual mode of cooking. Boil the cauliflower fifteen minutes, drain off the water, separate the flowerets, arrange them in a baking dish, cover with cream sauce and sprinkle the top with breadcrumbs. Bake twenty minutes and serve. A little grated cheese may be added, if desired. Broccoli is capable of the same treatment. These two plants of the cabbage family are nearly equal in food value, though considered slightly more nutritious than cabbage.

GLOBE ARTICHOKE

Globe artichoke has scarcely taken out its naturalisation papers yet. It is a true "furriner," as far as its growth in this country is concerned, for

American gardens rarely contain it except as a flower. Its habitat lies along the Mediterranean Sea, and there it is made to do duty for different kinds of vegetables.

The portion usually eaten is the fleshy part of the numerous leaflets, called the calyx, which surround the flower bud. This bud somewhat



The globe artichoke, showing the scales, the base of which is the edible part

resembles the old-fashioned flower called "hen-and-chickens," which one sees in pots and baskets and even in old wooden chopping bowls. Often it is planted in small kegs, whose staves after being bored by an auger, are adorned with the "chickens" set in, one to a hole, and this curious ornament then occupies a place upon the gatepost or tree stump in a grandmother's garden. Its blossom bursts from the centre of this bunch of leaves, sending up a stalk a foot high and decorated with quaint, dull pink, velvety flowers.

The bud of the artichoke, however, is much thicker and rounder than the whirl of leaves on hen-and-chickens. The plant itself belongs to the thistle family and has similar thorny, much-divided leaves. The blossom is thistle-purple, bursting from the centre of the bud in a tuft resembling the Scotch thistle. As far as I have been able to discover, one plant produces but very few heads, and as they must stand three to four feet apart, it would require quite a number of plants to supply a family with artichokes. We shall have to invite this new acquaintance to visit our garden next summer, and I think we shall place it in the centre of the radial garden. Of course if the cardoon grows cross-grained, through having overheard us remark that it was to have this place of honour, we may have to give the artichoke a back seat.

The artichoke likes a rich, deep soil with plenty of moisture and some salt. Our English cousins, who think a great deal of this peculiar vegetable, recommend for it a winter covering of seaweed placed about the roots to serve two purposes—to afford protection, and to furnish salt. Those of us who live near enough to the sea to obtain it, will find the use of seaweed both wise and economical; but those who do not, should apply salt with

the fertiliser, or as a fall dressing, in the same manner as salt is given to asparagus.

The plants may be started either from seed or from root suckers. If the seed be sown in February in the hotbed, and transplanted to the open in May, there will be globes the first year. When not sown until April or May, and transplanted in June, they have to be wintered over, in order to develop them to the bearing point. Root-stocks, or shoots, may be set out in April or May, buried fairly deep, and protected from the sun by an inverted pot or box, until the roots become well established. After the heads or buds have all been gathered, and this should be done promptly, as the plant earnestly seeks to produce seed and will stop work when that is accomplished, the stem should be broken off close to the ground. In the fall, tie the leaves together, cut off any that are too large, and bank earth up over the whole plant, being careful to protect the heart in the same manner as when banking celery. When freezing weather comes, cover with three or four inches of litter, and on top of this put two inches of coal-ashes. In the spring, rake off the ashes, remove the litter and spade or fork the ashes in around the plants. Coal-ashes are as fine for artichokes as they are for plum trees.

Chards are made from this plant, by cutting off leaves and stems to within six inches of the ground. When the leaves have grown again to a height of two feet, they are bound together, and hay or straw is packed around them to cause them to blanch. This is accomplished in about five weeks, and the chards are then ready to eat, though how to prepare and eat them seemed a mystery, until a Frenchman told me

"just like asparagus." The plant is ruined after it forms a chard, so that new beds must be made for this purpose each year.

The globe or bud is cooked thus: Tie up the leaves, sheaths, calyx, or whatever the edible portion is called, and drop it into a kettle of boiling salted water. Some cook books recommend putting a tablespoonful of powdered charcoal into the water. This would lead one to think artichokes were rather



The thistle like blossom in the centre of the globe artichoke

unhealthy and in need of purification, Boil them until a leaf comes off easily when pulled. Drain carefully, and serve hot with cream or Hollandaise sauce, or drawn butter; or cold, with French dressing. In eating it, pull off a leaf with the fingers, and eat the lower, fleshy portion, merely a thin skin which strips off the rib, for the bulk of an artichoke is debris, or waste. When all the leaves have been removed, the core, which is called the "choke," can also be eaten, but be careful not to eat the flower portion, as it resembles the thistle flower, in being full of "prickers." Besides being boiled, artichokes may be stuffed with chopped nuts or cold meat, highly seasoned, surrounded with a sauce, and baked; or they may be baked, wrapped in a slice of bacon, and served with mushrooms.

They certainly contain little, if any, food value, for the outer skin of the base of the leaves is the only portion that can be made soft enough to eat, while the rest remains like flint. Imagine eating a pine cone, which in make-up the artichoke closely resembles. The flower is exquisite, for the inner petals which surround the tree flower are a metallic, satiny, reddish purple. A good globe weighs a pound, is five inches in diameter and four inches high. There are thirteen kinds, varying in shape, colour, delicacy of flavour and time of reaching maturity.

ROOTS WE EAT

.



Long and short, fat and thin

CHAPTER XII

ROOTS WE EAT



As a rule, roots should be cooked in unsalted water. Salt hardens water, and also toughens the wood fibre contained in the roots, rendering them not only more unpalatable, but more indigestible. I should like to know in how many homes potatoes are cooked in unsalted water. Very few, no doubt, and yet that is the proper way. Onions, however, should be plunged into boiling, salted water and cooked gently, with the vessel uncovered, until tender; though, to tell the truth, there are often disputes about the best method to pursue with this vegetable.

Salsify, parsnips, scorzonera, celeriac, and the like should be scraped and immersed in cold water immediately, for contact with the air turns their surface black

RADISH

If I should begin this chapter with anything but the Sakurajima mammoth radish, the Man from Out West would never speak to me again, except in a far-away manner, for of all our new acquaintances he loves this one the best. I cannot say it is a little Jap, nor even a small brown one, for, on the

contrary, it is large and very white. If you have never eaten it, picture to yourself a pure white radish the size of a baseball or larger, firm and solid. Cut it, and you find it has the consistency of a Baldwin apple, firm and fine of grain; taste, and it proves to be away ahead of the most delicate spring



Radishes, one of the luxuries of early spring

radish that ever passed your lips. With so many virtues, it is hard to decide exactly where to commence their enumeration.

It will thrive at any season during the growing year; it may be transplanted or left alone; cultivated or uncultivated; it is as good to eat when in bloom as in its younger days; and one radish will provide bulk enough for three or four people. Need I say more?

"Honest Injun," as the children say, this Japanese friend is a marvel. I will give you the history it has written in our garden.

To begin with, the seed catalogue contradicted itself flatly, when it said "Raise as the ordinary radish," and in the next breath, "They weigh, when ripe, thirty pounds each." Anyone knows you could not raise a mammoth, thirty-pound radish in the same space required for a dainty little French breakfast one.

As usual, we took chances, banking on the old reliable mainstay, common sense, and so the seeds were sown April 21st one-half an inch deep, and the leaves appeared above the surface in seven days. I suppose it knew that it had to hurry to collect all that catalogued weight in one summer. In three days I thinned them to two inches, leaving the finest plants. In three more days three plants were lifted, and put into a deeply dug, rich bed, three feet apart (I was bound they should have room enough), well firmed, well watered, and each one covered with an inverted pot.

That evening I was accosted.

"What have you there?"

"Sakurajima radish."

"What? You don't transplant radishes!" Utter disgust was displayed at my ignorance.

"You most certainly do transplant fellows that are going to weigh thirty pounds each.

A long-drawn whistle followed this remark; then a deep silence.

"Well," I said, for I was beginning to feel hurt.

"I was just thinking it would be wise to order a stump-puller, and it is a very good thing that pony is coming soon, for it will take both of them to yank that Japanese root out of the ground."

Do you know, I deliberately fed those things nitrate of soda, for I was sure they were not growing fast enough, and I didn't dare feel a root to discover how large it was. June 20th, one was in bloom, a beautiful, purple, four-petalled blossom in the shape of a cross.

"I guess you will have to come out, mister, whether you weigh thirty pounds or not," I soliloquised. How disgusted I was when it did come up, to find that it weighed only two pounds and a half, leaves, stem and all.

I am not going to tell you in whose catalogue I read that statement in regard to the thirty pounds, as it would not be considerate to do so, but I am convinced of one thing—surely, the man who made it must be an Oriental with at least one of their failings. I have since seen a photograph of Japanese peasant women with their day's pick of Sakurajima or Daikon radishes, and they were little larger than mine, though there is a variety raised in one section of Japan called Sakurajima Daikon which weighs thirty pounds.

But we forgave the poor thing for not weighing thirty pounds when we tasted it.



Blossom of the Sakurajima mammoth radish

Those that were left in the seed bed grew beautifully, and the second crop, sown only to get a photograph of the seedling, were entirely neglected. We happened to pull up some one day in passing, and though they were not so large as those that had been given care, they were more symmetrical and just as good in texture and flavour. Two of these were pulled October 30th and they furnished satisfaction and plenty for a family of eight. Never mind, little French breakfasts, and the rest of you wee ones. We do not forget our old friends, but Saki must have a place among you, and I know you will welcome the Oriental big brother with his huge leaf plumes. There are very few gardens with a lack of radishes, and there is probably very little either new or interesting that I can tell you about them, unless you are undergoing the anxiety and uncertainty of starting your first garden.

Radishes love cool weather, but they must have fine, rich earth to grow in, so do not sow the seed until the earth can be worked into a fine condition. Select a sheltered portion of your garden, but one where the soil can be got into-condition early. Sow the seed in rows about one-half an inch deep, and rather thickly, for they are erratic about germinating, unless you have sifted them in a strainer to lessen the possibilities of failure. Thin out to one inch apart, as soon as the seedlings can be handled. Keep the earth well cultivated, and, as soon as the second leaves appear, work in a little nitrate of soda near the roots, but not in touch with them. They must grow quickly, to be crisp and firm. Do not sow too many at once, or your crop will be all gone at the same time. You should sow every ten days, or two weeks, to ensure a succession throughout the early-growing season. I always sow lettuce and radishes together, making a double row, and planting them back to back. As the radishes come out the lettuce is transplanted into the place left vacant, and as the lettuce is transplanted new radishes are started where it grew. The Sakurajima can be planted last, as this big one endures the hot weather easily, though I think it is a little better in the fall. There are regular spring, summer, and winter radishes offered by the seedsmen; and if you are very fond of these rootlets they are yours for the raising throughout the year. The process is simple; but of course if you want them very early in the spring, they must be grown in boxes in the house, in the hotbed, or coldframe. Winter radishes should have their seed sown in July or August. They must be taken up before the severe frosts, stored in sand in the root cellar, and freshened in water before they are served.

There are red, white, red and white, white with red stripes, yellow and

black varieties—a goodly choice, surely. In serving they should be peeled as thinly as possible or the skin cut down part way to form a rosette about the root end. The leafy top is cut off entirely, or a small bit of the green left to serve as a handle. The fibrous tap-root at the lower end should always be removed. Radishes are usually preferred icy cold, and small pieces of ice are therefore placed among them in the dish in which they are served.

This plant is an annual, sending up tall flower stalks with white or lilac blossoms. The winter radish is a biennial, blooming the second season. The family enemies are the black flea-beetle and the root-maggot. The former may be checked by using Paris green, or London purple, either sprayed on, or, if in powder form, dusted upon the plants. Land plaster, air-slaked lime, or coal-ashes can be sifted over the leaves. Root-maggots come usually from the use of fresh manure, so that it is wise to prepare the radish bed in the fall, and to use only commercial fertiliser in the spring, though I really think a little nitrate of soda is all they need if the ground is in fair condition. Should the maggots persist and become very troublesome, it is wiser not to raise radishes, carrots, parsnips nor cabbage for a year or two, unless you are fighting this pest with carbon bisulphide.

Glancing through a new cook book the other day, my eye was caught by the word "radish," so I paused and read that the large Japanese and black Spanish were grown entirely for winter use. Was not that a crushing blow after my success with them all summer? Furthermore, this same book told me they could be stored in a root-cellar where they would keep perfectly until spring, and last, but not least, that, cooked according to the recipes given for turnips, they made a very good winter dish. Frankly, I cannot imagine a radish cooked, but my curiosity will not let me escape at least a trial.

Next spring I shall take great pleasure in having Sakurajima sandwiches for afternoon tea. My Jap friend, when cut very thin and placed between dainty slices of lightly buttered entire-wheat bread, makes as pleasant an element in a light repast as one could wish.

RAMPION

I must confess I was more at sea about rampion this summer than any other vegetable in our garden. I could find nothing whatever about it beyond a few directions. Sow the seed early in May, by only pressing it into the soil. It is the tiniest seed I have ever seen, much smaller than poppy. Thin out, if too thick—that was lucid, when one had no idea to what size they

were expected to grow. Roots could be gathered for use from October throughout the winter, but how they were to be used remained a mystery.

I did as I was told, however, sowed the seed the 10th of May, and saw the tiny leaves appear thirteen days later. I thinned the seedlings a little bit, thinking it safe to do so, for it seemed to me that every infinitesimal seed had germinated. Then I just cultivated it, and cultivated it some more, and when October came, I said to the Man from Out West:

"It is time to eat these; pull one up and we will taste it."

"Do you eat it raw?" he queried.

"You know quite as much about it as I do, for the only thing I have been able to discover is that it is edible by October."

He pulled; then we both tasted, simultaneously tasted. I am glad, very glad, there was not a camera pointed at us, for our expressions would not have

been good to pass down to posterity. Then we both—well—it was not refined nor good form, but we simply expectorated. Nature rose supreme in self-preservation. "Rotten radishes!" was all we said, but as a food, rampion has lost all interest for us.

I have searched everywhere for some clue to rampion, wondering how in the world it could possibly be



Rampion—edible root with an unedible flavour

eaten and enjoyed. At last I discovered an item relating to it in an English publication. The roots may be eaten as radishes, or with the leaves cut into small pieces for a salad. It may also be boiled and served like asparagus, but is most palatable when pulled young and eaten fresh. There can be no doubt at all that tastes differ widely.

I am afraid rampion will never find a hearty welcome within our garden boundary. We could not summon sufficient courage to prepare it in any way for the table, and I cannot find it mentioned in any cook book.

BEETS

Most of the roots we eat are not roots, properly speaking, but root-stocks—storehouses where nourishment is kept for the plant to feed upon while maturing its seed the following season. Some of them are biennial,

blooming the second season, while others are the result of special stress laid upon the development of the root, the bloom coming the first season. Still others multiply from this fleshy root, instead of from the seed.

Beets are a root-stock, the seed forming the second year. There are numerous varieties for table use, and several for feeding stock, while others are cultivated purely for the sugar they contain. The ordinary garden contains only the table varieties. Among these, there are early, late and winter kinds. Early beets should be sown not too thickly and about one inch deep, as soon as the weather permits the ground to be worked. The seed is a fruit which I have described before, therefore do not be astonished if more beets come up than you apparently planted. I saw the Texan on his hands and knees at dusk one day last spring thinning out beets, and heard him remarking that I had either sown them unnecessarily thick, or else that they were of uncommonly good seed. He really did thin them, but every once in a while a look of sadness was cast at the pile to be thrown away. A neighbour dropped in at the time—a dear old gentleman whom the children call Santa Claus, because of his long gray hair and beard, and he said:

"Why don't you plant those beets instead of throwing them away?"

"You can't transplant beets, the book said so."

"Indeed you can, just try it." He went to the barn, found the dibble, and I left them planting those poor, wilted seedlings in the dark. Would you believe it? The best beets we had were those miserable, uprooted, rescued and planted-in-the-dark creatures.

Beets revel in a rich, light soil, well dug and pulverised; for the fewer stones and earth lumps they have to push out of their way, the finer they will be. When the seedlings are several inches high, they should be thinned until the strongest plants stand six inches apart. You may set the "thinned" plants elsewhere, or use the leaves as "boiled greens." Winter beets should be sown in the same manner as early beets, but late in May or early in June. Good cultivation is extremely necessary for this crop, as it does not grow very deep, and the surface moisture should be conserved. Late beets should be dug before freezing weather, though light frosts seldom hurt them. Twist or cut the leaves off, a couple of inches from the root, pack in sand, and place in the root cellar, or store in pits in the open ground.

Beets are subject to scab on the root, and to rust upon the leaves. Scab comes from the same cause as potato scab, but it cannot be treated in the same manner, so that it is imperative not to raise beets where scabby

potatoes have been grown. Leaf-rust is not very troublesome, and does not seem to affect the beet itself.

This vegetable, whose colour is so often used to describe the vividness of a blush, possesses numerous varieties and colours other than those at the non-actinic end of the spectrum. These show manifold phases, being long, short and round; red, dark red, black red, red and white; sweet, very sweet and not sweet at all. If you want two crops before the winter, it is wise to sow an early and an extra-early variety.

Sugar beets are grown for their sugar, and stock beets, or mangel-wurzels, for feeding stock. The latter are weird, freaky things, rising up out of the ground, surmounted by a tuft of leaves, and to my taste are extremely unsightly.

Table beets may be boiled, stewed, creamed or pickled. In boiling, be sure not to break the skin. Put them into boiling water and cook slowly for one hour; then drain and the skins will slip off, if gently rubbed with a cloth. These boiled beets are always sliced, and should be seasoned with salt, pepper and butter before they are served.

They make a delicious pickle, and that is an excellent way to use up any surplus crop. Wash them thoroughly, but do not break the skin, boil until tender, peel, place in glass jars, and pour over the following liquid, while boiling hot: One quart of vinegar, seasoned with one teaspoonful of whole mace, and one teaspoonful of ginger; strain this and add two tablespoonfuls of grated horseradish. Seal the jars and the pickle will keep indefinitely. Plain, boiled beets, covered with vinegar, are also extremely palatable.

Even table beets contain large quantities of sugar, and can be counted upon to furnish this requirement of the human make-up.

PARSNIPS

Parsnips are one of the finest and easiest of culture among all the root crops. The seed should be sown as soon as the ground can be prepared, the plants thinned to six inches, and well cultivated all summer. It is a good plan to plant radish seed with them, as they are slow of germination.

There are two theories in regard to digging parsnips: one is that they should remain in the garden in order to have a touch of frost, then be dug up, placed in boxes, covered with sand to exclude the air and stored in a cool room or cellar; another is, that they should be frozen, in order to bring out their sweetness. We prefer the latter method, and last winter we had



Sixteen inches of parsnip—straight, smooth, delicious



The same parsnip after five days in the air. Moral: Raise your own parsnips and store them properly

the very finest parsnips we have ever eaten, though they had to be dug out of the frozen ground with a pick mattock. This year they shall be dug and placed where they can be easily obtained, but they will have plenty of cold weather, I think, if the roots are set in the mellow soil at the bottom of a shallow trench with a fair covering of hay, sufficient to leave them accessible. If they come to the house frozen, they should be placed in a basin of cold water to draw out the frost. You will find ice in place of the water shortly, but this may be thrown away and more cold water poured over the roots, continuing thus until the parsnip is in its normal state.

To prepare for the table, the roots should have the skin scraped from them, then be boiled until tender, drained and mashed with salt, pepper, and butter to taste; or drained and cut in lengthwise slices, which may be fried to a golden brown.

Parsnips on toast are very good, and so are parsnip timbales, and scalloped parsnips. The latter dish is prepared by boiling the roots until they are thoroughly tender, cutting into small pieces, and placing them with alternating layers of cream sauce in a baking dish. Have the first and last layers sauce, sprinkle breadcrumbs on the top and bake for half an hour.

This vegetable is very free from insect pests, the root maggot being its worst enemy. It must be said, however, that when that able-bodied "critter" does appear, it means farewell to this crop for several years, unless you inject carbon bisulphide into the earth near the roots.



The parsnip's blossom



Early round parsnips



The true Danvers long carrot, exquisite in foliage, rich in colour, delicate in flavour, and fine enough to win a prize at any agricultural exhibit

CARROTS

Carrots and parsnips require about the same treatment. They may be planted at the same time, although they are harvested at different seasons. If you have one long row to spare, it is well to put these two vegetables in it, and they can be located in an out-of-the-way spot, if more convenient, because parsnips, at least, occupy the ground the entire summer.

The earth should be dug very deeply and broken up finely to produce the best roots, for carrots grow to a pretty good depth, unless you deliberately plant one of the short varieties. Sow them as early in the spring as you can prepare the earth, planting the seed half an inch deep. They are very slow to germinate, and you may harvest a crop of radishes by sowing that seed at the same time. The radishes are "helpers," as the children love to call them, when planted this way, for they break the soil's surface and keep it from baking over the more slowly germinating seeds.

When the carrots finally do appear, keep them free from weeds, and thin to three or four inches apart. This sowing will give you early carrots ready for June, of which some people are very fond, when cooked as follows: Cut into dice, thrown into boiling salt water, boiled until tender, drained and served with drawn butter.

Carrots in turnip cups make an extremely pretty dish, and one very much liked by those who care for the flavour of these two vegetables. The turnips are scooped out until about the size of a small cup and then boiled until tender; the carrots are cut into dice, boiled, covered with a

cream sauce, then placed in the turnip cups and garnished with a purple-veined kale. There are five or six other methods of cooking them besides pickling. This last preparation is handled in the following manner: After cutting the carrots in thin slices and cooking them until tender, drain and put them into glass jars with a slice of onion, two bay leaves and a teaspoonful of celery seed; then cover with vinegar and stow away for twenty-four hours, when they are ready to use.

Late carrots should be sown in the latter part of May, or early in June, but are treated in the same way and may be harvested when the frost comes. They keep wonderfully well over winter, either in sand in the root-cellar or in pits in the garden. The early sown will not do for winter use, as I have found to my sorrow, for they become overripe and decay in the most remarkable manner, apparently melting away to nothing, first the heart going, then the rim. I remember the Texan unpacking a box of them which had



Early carrots rot if kept into the winter



Young carrots cut into dice for soup, and sliced for creaming

been in the root-cellar some little time. There were holes in the sand, the exact size and shape of a carrot, but no carrots were to be found, not even a trace of the skin, but merely a deep shadow, a memory of orange beauties, nothing more.

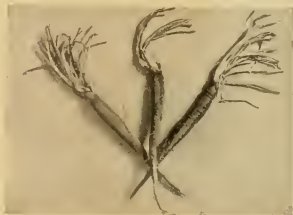
Carrots, when young, contain water and a small amount of mineral matter; full grown, they are quite rich in sugar. The leaf is an extremely pretty, finely cut, bright green, and the blossom resembles wild carrot, or Queen's Lace.

SALSIFY

Salsify is extremely easy of culture. It is sometimes called oyster plant, or vegetable oyster, because it is like that shell fish in flavour, although the resemblance is a fleeting one indeed.

There are three varieties of this plant, salsify, scorzonera and scolymus, which may all be cultivated in the same way.

The seed should be sown in the early spring, in the deeply dug rows previously prepared, and covered one-half an inch deep. When the seedlings are three or four inches high, they should be thinned to three inches, for the root seldom becomes more than two inches in diameter at the top, though it grows very deep, sometimes fourteen or fifteen inches. The root is generally straight, but sometimes it branches for no apparent reason, and the result is an unfavourable



Salsify, or oyster plant



Scorzonera seedling



Artistic arrangement of the scorzonera blossom



Scorzonera root and leaf—a salsify worth growing

condition, causing a good deal of waste and work in preparing it for the table. The roots may be left out over the winter, or dug in the late fall and stored away with the parsnips. It is essentially a winter vegetable, and a very acceptable one to the housewife, I can assure you. It has no enemies that I can discover, and it blooms the second year. The variety most commonly grown is the mammoth Sandwich Island.

Scorzonera, sometimes called black salsify, is one of the pets among our

new vegetables. It is smaller than the Sandwich Island variety, but much more delicate, we think. The leaves are long and grass-like, and it bloomed this year, though common salsify is a biennial. The blossoms are exquisite, as golden as the dandelion, borne upon long stems, the buds being placed in a symmetrical way, resembling a fountain. As it is truly an annual, and not a freak of this year's growth, it shall be one of my flower vegetables.

Prepared in this manner for the table we think it delicious:

Scrape the roots, cut them into pieces one inch long, wash thoroughly and drop into boiling salted water. Boil until tender, drain, cover with drawn butter and serve steaming hot. Salsify is prepared in the same way, Here is a variation: Mash the vegetable after it is drained from the boiling water, form into balls like potato cakes, dip into flour and fry a light brown. To me, the latter method is preferable for salsify, while the former is better suited to scorzonera.

As this is the oyster of the vegetarian, it may be prepared as a mock soup,



Scolymus—thistle-like leaves and a sprawling root

or even as mock oysters. Long strips may be dipped into egg and cracker crumbs and fried in deep lard. Scalloped, or boiled and served with a brown sauce, it is equally delicious.



Scolymus blossom. Some people assert that scolymus is good to eat

Scolymus excited a good deal of remark in our garden one summer. The seed was sown the end of April and in eleven days the seedlings appeared. With much difficulty in about three weeks, they were thinned to stand four inches apart.

"For goodness' sake," said the Texan one evening, "do you think we are so Scotch that out of pure patriotism we have to grow thistles in our back yard?"

"Thistles, indeed," I replied; "that is scolymus."

"Well, you can call it any old botanical name that you please, it's a thistle all right. There isn't

another plant in the world with as many thorns except cactus, and it isn't cactus, that I am sure."

"Well, look at the marker and you will see what it is."

<p>Cultivate like a carrot. SCOLYMUS: Keep like a turnip. Eat like salsify.</p>

It bloomed the latter part of August, though I understand that it had no right whatever to do such a thing. The blossom was yellow, opening in the morning and fading before night. The stems sprawled out upon the ground in every direction, for scolymus was left entirely to itself—no one cared to go near it, not even to hoe it. When Labour Day came, I said:

"We shall have a new vegetable to celebrate the holiday. Will you dig it or shall I?"

"Let me do at least the purely physical labour among these weird vegetables; I am shy on botany and misapplied science in general, but I can yank things out," said the strong and willing one.

"Get the fork, then, and come along."

"Not those things!" as I showed him his thistles.

"Them's them," I said.

It was cruel to spoil his holiday in that way, but what was I to do? A woman in skirts never could dig them, and no human being with a particle of common, every-day, horse sense would of his own free will and accord even fool around in the immediate neighbourhood.

After much trial, tribulation, fierce and startling pain, they came up. Ye gods, what roots! Down, sidewise, all around they went, such sprawling creatures, they reminded one of a whole family of centipedes.

Sad to relate, though cooked and served the same as scorzonera, it was as tasteless and insipid as it was fierce and stinging in growth.

Scolymus, farewell! Never dare to enter our garden again!

This vegetable contains some mineral matter, a small quantity of sugar and starch, and a heap of cuss words.

TURNIPS AND RUTABAGAS

Turnips are essentially a winter vegetable. Somehow, one never thinks of using them in the summertime, though they make mashed potato quite

another dish when used in conjunction with it. That mixture did not appeal to me the first time I heard of it, and I stuck up my nose and whispered "Irish" to myself. This was rather odd, seeing that the Texan has some

Irish blood in him, and I don't know that I am entirely exempt myself.



White turnip

If you have never tried it, it will pay you to prepare this dish, allowing one good-sized turnip to twelve medium-sized potatoes. Peel the turnip, cut it into pieces, put them into boiling salt water and boil until

they can just be pierced with a fork. Then put in the potatoes, and boil until all are tender. Drain off the water, put the kettle over the stove uncovered, and shake the vegetables in it until the remaining water has all steamed off. Now mash with a little butter and pepper and beat light with a fork. The result is quite good.

Swedish turnips, rutabagas, may be used with sweet potatoes, by cooking the "beggar" until tender enough to be drained and pressed through a colander. Have baked sweet potatoes ready for action, open them, take out the centre, and add it to the turnip, together with a little salt, butter and pepper. Beat light, put into a dish and bake about twenty minutes. They may be browned, or made into balls by cutting that shape from the turnip with a vegetable cutter, or cooked in German fashion, etc., etc.

Turnips may be grown as a summer crop, if the seed is sown when spring opens, for it requires only six weeks or so for the roots to mature. The seed should be planted one-half an inch deep, and the seedlings thinned to three inches. When the turnips are wee things, yet large enough to cook, they may again be thinned, allowing those which remain to be six inches apart.

For fall turnips, the seed should be sown late in July or early in August. Give them a rich bed and good culture, for they must be out of the ground before Jack Frost catches them.



Swedish turnip (rutabaga), yellow flesh, with a crown of purple

Place them in the root cellar, or in the pit with the carrots, but be sure they do not become frozen.

Their worst enemy is the root maggot, for which there is but one remedy—carbon bisulphide. If you do not care to go to the trouble of using this volatile liquid, it will be wise to cease raising turnips for a couple of years.

Rutabaga is a variety of turnip much used by the Germans, and in some of the Eastern States it virtually takes the place of the turnip in the majority of country households. It is much richer than turnip, and the fibrous roots come from the side of the root-stock, instead of from the tap-root only, as in the case of turnips. Rutabagas must be sown the end of June, for they require a longer period of growth.

Rutabagas are more nutritious than turnips. They contain a small amount of nitrogen, as well as carbohydrates, are not so watery as turnips, and much stronger in flavour, as well as in colour.

KOHLRABI

This is one of the cabbage tribe, differing from the rest to a marked degree, for the edible portion of the kohlrabi is a swelling in the root just above the ground. It may be pared and eaten raw; or pared, cut into slices, boiled until tender, then drained and covered with either cream or Hollandaise sauce.

The English name of this vegetable is Knol Kohl, and it is much esteemed by our cousins across the water. It is remarkably good for keeping, surpasses even the cabbage in that respect, and greatly resembles the turnip, though it is richer in food qualities.

The seed should be sown the first week in March, either in a coldframe or a sheltered seed bed. The seedlings will be ready to transplant in June, and they should be set three feet apart. They are just as gross feeders as the rest of their relations, and will take all the poultry manure, stable manure, bone-meal and wood-ashes you see fit to give them. It would be wise to clip the leaves slightly, as one would those of cabbage, before setting out.

In cultivating, leave the round root knob on the surface of the soil, and do not attempt to cover it. The amount in weight which these things produce is very remarkable to me—eighteen to twenty tons from an acre. For winter use, place them in the root cellar, or pit, with carrots, turnips and parsnips. The flower is produced the second season, and I imagine it resembles the cabbage, though I have no personal acquaintance with it.

TURNIP-ROOTED PARSLEY

One of our pleasant new friends is turnip-rooted or Hamburg parsley. The leaf is much larger than that of ordinary parsley and lies flatter on the ground, the root grows to the size of a good table beet.



Two roots of the turnip-rooted parsley. They grew side by side, hence the earth could not have had much to do with their shape

like the carrot, and turnip, one cannot distinguish them from the latter vegetable, as far as looks and texture go, and yet a pleasant, delicate flavour of parsley is present in the soup. A later planting may be made, say in May, and the roots stored away with carrots for winter use.

TURNIP-ROOTED CHERVIL

There is also a turnip-rooted chervil. The seed refused to germinate for me; but if the flavour of the root resembles at all the flavour of the green, I should not care for it. It is used in flavouring soups and stews after the manner of turnip-rooted parsley.

CELERIAC

Celeriac is another of our dear friends, and the raising of this root obviates entirely the necessity for growing a soup-flavouring celery.



Seedling of turnip-rooted parsley

This enlarged root of one of the varieties of celery supplies us with a very useful winter vegetable, and one that is a marked addition to soup. As a vegetable, simply cut and served "*au naturel*," as we prefer Sakurajima radish, this is just to our liking.

It is likewise very pleasing when cut into small pieces, boiled until tender, then served with drawn butter the same as scorzonera. It adds a very acceptable winter dish to the hard season's *ménu*, and this may be varied by serving Hollandaise sauce, or by scalloping, using alternate layers of cream sauce and boiled celeriac, chopped fine. The top layer should be dusted with grated cheese and breadcrumbs, and the whole baked for thirty minutes. Thus prepared it is delicious.

The seed should be sown at the same time as late celery (April), but it may be transplanted in the garden at once, instead of into a second seed bed. The plants should stand eight inches apart in the row, as a good root measures about four inches in diameter. The stems and leaves are very small, spreading out in a circle above the plant, and, as they are not used, they do not need blanching. The earth about the roots should be kept

in good condition, however, and the plant requires plenty of food. It is well to put some hen manure in the row when setting out the seedlings, or to work in some complete fertiliser within easy reach of the roots a little later.

I planted three varieties in my garden last spring, Apple, Erfurt Giant and Thorburn Giant. The last failed to germinate, and the first two required thirty-three days. The roots were ready for use in October, the time taken to reach maturity from seed sowing being about seven months.

Celeriac has no enemies that I know of, although I should think it would be subject to the same blight as that which affects celery.



Erfurt Giant celeriac seedling

The same tonic properties are in this most satisfactory bulbous root as in celery, and its soothing effect on overwrought nerves should give it a warm welcome, even if it did not possess innumerable additional attractions.

POTATO

There are volumes upon volumes written about the potato. It fairly makes the head spin to glance through even a few of the briefer ones, the mere potato essays. The result is that you are so overpowered you have no idea at all, or at best a very hazy one, as to which way is really the best to plant them, whether in hills or in drills; which way to prepare the sets—shall it be whole potatoes, half potatoes, pieces with one, two, three, or even four eyes, sprouts, or just the peel? Must manure be used, or is it fatal to omit it abso-

lutely? Is commercial fertiliser a good thing, and, if so, what combination is the best to use? As to the varieties, you feel that the only possible way to select one is to put each name on a slip of paper, place the slips in a hat, toss them well—and draw. There are two firmly undisputed facts, however. One is that the potato is a tuber; and the other



The potato is a tuber—quite distinct from roots

is that nine out of ten potatoes are ruined in the cooking.

It is pretty well agreed among American horticulturists that the best crop is obtained from planting sections of the potato which have three eyes, though some Englishmen argue that the finest crop comes from planting whole, medium-sized tubers.

We enjoyed experimenting with these two differing methods last summer and obtained the following results: The whole potatoes sent up more shoots five days sooner, were handsomer and certainly equally as strong as those from the cut sections, but the yield from the cut potatoes was thirty-five and a fourth pounds (a very short row), while the yield from the whole tubers (same length row) was but twenty-eight pounds. The average size from each row was nearly equal, but the whole tubers yielded ripe potatoes two weeks earlier than the cut sections, though planted the same day and in exactly the same way.

The Man from Out West played a snide game, to be more expressive than



The beautiful blossom of the much-maligned potato

elegant, for he deliberately stole some good big potatoes from several vines, pulled them up bodily to do so, and then calmly replanted the burglarised vines, leaving the smaller potatoes to mature.

"Why," said our faithful Abner, "you can't do that! Them vines won't live; they're wilted a'ready."

"I know that," said the Texan, "but they may brace up and ripen those other tubers, and if they don't, I have all the good potatoes there are in each hill now; so that there will be nothing lost and perhaps something gained."

Abner shook his head.

"Maybe they will, but I never heerd tell of anyone doin' it afore."

But then Abner is sure we are crazy. I shall not soon forget the expression of his face when it finally dawned upon him that all my "graves" were vegetables. He was quite sure they were flowers, and took the fact of their being in the vegetable garden as a freak of womanhood, and then to have "such an all-fired lot of kinds! Why, there wasn't more'n a meal of each one!"

The subject of fertilising potatoes has given rise to much thought and experiment. The demand in this country for that staple vegetable is enormous, and it is of vital importance that the crops should be good, as well as big.

There is one fact which in all my research I have never seen refuted, and that is that manure should be placed upon potato ground the year previous to planting the crop, and that the manure at the time it is spread should be well rotted. Potatoes planted in freshly manured ground, or directly in contact with the manure, invariably develop scab. The land should be well fertilised the preceding year, if possible planted to a late crop, so that the ground can be worked up late in the fall. The following spring thorough cultivation should take place, after which chemical fertilisers are distributed over the ground. Potatoes require a large amount of potash, so that the fertiliser should have this chemical in a readily soluble form; in fact, all constituents of the fertiliser should be readily soluble, if no manure has been used. In this part of the country there are two formulæ for mixing chemical fertilisers for potatoes which are creating a great amount of interest and considerable discussion. One is called the potato formula 7, 4 and 10; the other the Long Island formula 4, 8 and 10. In common English this means 7% of nitrogen, 4% of available phosphoric acid and 10% of potash in the former; and 4% of nitrogen, 8% of available phosphoric acid and 10% of potash in the latter.

The favour seems to rest with the Long Island one, but both formulæ can be had, ready compounded, by anyone who wishes them.

The amount of fertiliser placed in the soil does not always determine the yield, even though large quantities of the bracer be given. The yield will not be great unless the texture of the soil be favourable, and the water supply sufficient.

Potatoes love a light, rich loam, very loose and well worked, and the finest yields usually come from new land or from turned-over sod. There should be plenty of humus in either light or clay soils, and moisture is a prime requisite, though too much will cause both blight and rot.

This dread disease must be watched for, and forestalled if possible. Do not allow it to get a foothold on your plants. Keep the leaves well sprayed with Bordeaux mixture, using it when the vines are but four inches high. To delay this first spraying would be analogous to locking the stable door after the horse is stolen. The vines should be sprayed every two or three weeks, and at least four sprayings given during the season. I presume you will buy Bordeaux ready mixed, for it is not expensive (\$1.00 a gallon), and it must be greatly diluted before using. The first two sprayings should be made up in the proportion of one gallon of Bordeaux mixture to forty gallons of water; the two subsequent sprayings in the proportion of one gallon of Bordeaux to fifty gallons of water.

Small spraying cans with a nozzle are made in one and two-quart sizes, and cost \$1.00 and \$1.50 respectively. The knapsack sprayer holds twenty-four quarts, costs \$2.50, and has two nozzles.

There are two varieties of blight, called respectively "leaf blight" and "potato blight." The former is often an aftermath of the black flea-beetle. The regular, dreaded variety of potato blight also causes rot in the tubers. As spraying is the preventive, as well as the cure, for both diseases, it is necessary to perform the operation regularly. If heavy rains occur, it may be necessary to spray more than four times in a season. In "The Survival of the Fittest" I have spoken of the necessity for planting fine, healthy seed in order to avoid scab, and how to treat it before planting, by placing it in a solution of corrosive sublimate or formalin, should the disease be in the ground.

Bordeaux will also "fix" flea-beetle and potato-bugs, so really the only things necessary to ensure good potato crops are to keep the plants well sprayed, well fed, and well cultivated.

There are innumerable varieties of potatoes for varying situations, and for separate seasons of ripening. These present marked differences in colour of skin and varying depths of eye. There are potatoes with red, yellow and black skin; round, oval and "potato shaped." Those from South America are bright yellow, and much more dry than ours when cooked. German potatoes are quite sweet, dry and light yellow. They are largely imported for salad.

Each portion of the United States has its favourite variety or varieties. The Green Mountain, Rural New Yorker, Early Rose, and Gold Coin are general favourites in this locality. It is wise to select either a very early potato or one known to be a good keeper, according to the time of year you wish to use it. We think a potato that is smooth, without deep eyes and medium, rather than large sized is the best, for there is less waste when paring for culinary uses. We have been much pleased with the Gold Coin in that respect, and so have several friends of ours. This variety was the one tested in our garden last summer.

Sweet potatoes require a long, warm season, as the root is not a tuber but an enlargement. They are called tubers, however, when they are not called sweets. The foliage is a beautiful vine, and it is often grown in the house by placing one end of the potato in a jar of water, where roots quickly form, while the other end sends out the leaves.

There are more than eighty varieties of sweet potatoes, Jersey Sweets and Carolina Reds being as popular as any. This plant insists on having a light soil, and that is the reason it is grown so extensively in New Jersey and other points close to the Atlantic coast. The soil must not be too light to retain moisture. This, however, rarely happens in a garden plot, and the majority of gardens retain sufficient moisture in their soil. If the soil is too light, add humus, being careful not to have too much decayed vegetation; and if, on the other hand, there is a great abundance of vegetable matter, add sand. For a fertiliser, the sweet potato requires a greater amount of potash than phosphoric acid or nitrogen, and more nitrogen than phosphoric acid.

The fertilisers required by potatoes have been considered at great length. But since potatoes cannot be manured, one may justly devote space to a discussion of other plant foods for them.

We had very few potatoes this year, and they were fed bone-meal and wood-ashes mixed with manure (another experience), and we had some pretty fair specimens, none prize winners, but prize winners are not always the best

for cooking purposes. When that point is taken into consideration, potatoes should all be of a normal, medium size; for, if mixed in size, the small ones cook before the large ones. In boiling, the small ones become overdone, and in baking the small must wait for the large, to their own detriment.

But to return to our personal experience. The potatoes which lay in or close to the manure were imperfect, but the replanted vines thrived, and all the small marbles left upon them matured.

The sweet potato is first cousin to the morning-glory, but, unlike that beautiful vine, it never blossoms in a northern latitude. In its southern home, it is perennial and blooms freely.

Unfortunately, our summers are so short that the sweet tuber cannot be cut for planting, as the Irish potatoes are, and it is wise to start the eyes sprouting early in spring. To do this, place the potatoes close together in a box or coldframe, and cover them with loose soil or sand to the depth of three inches. In a short time the sprouts will start, and when setting-out time comes (when the maples send out their leaves), these sprouts will be large enough to separate from the tuber and be transplanted like any other seedlings. If cuttings are placed in the soil, as in the case of Irish potatoes, they are apt to rot before they start. I should think, however, that they could be started in the house successfully.

They should be "hardened off" before setting in the open, or the shock is apt to kill them. The plantlets should be set eighteen inches apart, and it seems to be an almost universal custom to set them on a ridge six or more inches high. The critical time comes just after transplanting. Let it be carefully done and give protection until the roots are well established. Their enemies are the same as those of their Irish sisters, and the cure the same, too.

Potatoes should be dug when the foliage turns brown, which usually occurs in August, though late potatoes will not be ready until September. A garden-fork is the proper tool for digging up the tubers, and it is best to do this when the earth is dry. Allow them to dry thoroughly, then sort, laying aside the poorest for immediate use, together with such as are injured in digging. Sometimes one of the fork tines will mar or cut them. Put the best into the root cellar to keep for future reference. Do not expose them too long to the hot sun after digging, nor leave them out in a shower. Sweet potatoes must "sweat off" before storing. White potatoes will survive temperature as low as thirty-five degrees, but sweet potatoes must be kept warm and dry. White potatoes, like apples, can be stored where they do not

freeze; but they must be kept in the dark; as daylight will start the sprouts. These, by feeding upon the starchy substance, will cause the tubers to shrivel, and thus ruin them.

There are over twenty ways of preparing white potatoes for the table, and nine or more ways for "sweets."

Boiling is the most common method for both varieties, but not the most nourishing. Sweet potatoes are always boiled in their skins, the whites are peeled first. The richest nutritive substance lies directly under the skin; therefore white potatoes, too, should be boiled in their jackets.

Baking is the best way to cook them, and frying the worst, though there is perhaps nothing which will take the place of fried potatoes. The vegetable itself is digested only in the mouth and the small intestines, and when covered with grease it becomes more difficult to digest. The food elements contained in it are starch and sugar.

Stuffed potatoes are excellent eating. These are prepared by baking the potatoes, scooping out the insides, when soft, mixing with salt, pepper, butter and a little milk or cream or the beaten white of egg. Beat all until light, return to the skins, warm again in the oven and serve. Fish or meat may also be added to the white potatoes before returning them to the skins. The Southerners bake sweet potatoes in hot ashes and coals, which is by far the best way. One placed on the fire shovel and set upon the hot coals, like the old-fashioned roasted apple, tastes better than any ever baked in the conventional style in a modern oven.

JERUSALEM ARTICHOKE

This plant grows wild in marsh-lands. Nearly everyone knows it, whether one have been formally introduced to it or not, for it is seen in almost all uncultivated, unkempt spaces; in the Middle States. It is a diminutive sunflower, sometimes called the Italian sunflower, but it is grown in the garden for its edible root, not for its seeds. The use of the tuberous roots is also the best method of propagation. The roots need no help in multiplying if they are left quite alone. In the West these tubers are used a great deal and intensely relished, for they grow in the wilds, need no care, and are a sure crop. They may be eaten raw or cooked.

If you wish to plant them in your garden, a whole tuber may be used, or one may be cut to eyes, just as potatoes are. They may even be started from seed, but that mode is seldom practised, as the finest plants come from

the tuber method. I have not yet summoned courage enough to grow them in my garden, but I will give you the description of them I owe to the Man from



Jerusalem artichoke, a member of the sunflower family, but raised as potatoes are

Out West. Of course he ate them as a boy, when his mother prepared them. He says he thinks that they were boiled; and then he goes off into rhapsodies over the fun he and his "pards" had in digging the tubers, cutting them in half, scraping and eating them, just as Westerners frequently eat apples. As that is

precious little information, I have had to get out all my cook books, with the result of finding several ways to prepare them, but in all of these care must be exercised not to allow them to become heavy or soggy.

After being scraped they must be plunged immediately into cold water, for exposure to the air discolours them. Then cut them into thin slices, cover with boiling water and cook gently until they seem tender when tested with a fork. Be very careful they are not overdone. Drain, cover with a cream sauce, and serve at once. Brown sauce may be substituted for cream sauce, and the tuber may be cut into cubes, instead of slices.

They may be pickled, or sliced very thin and served on lettuce with a French dressing. A Canadian friend tells me that his countrywomen bake



Red onions

them, as sweet potatoes are baked in "the States," and he, like the Man from Out West, still raves over the memories that cling to him—of the delicacy of the raw, scraped tubers.

ONIONS AND SHALLOTS

There are two methods of growing these root bulbs—they may be grown from seeds or from sets. Growing from seed requires very careful handling, for the seedlings are the tiniest things imaginable, mere threads of green, streaking upwards. Sets are baby onions, formed by a division of the parent bulb, instead of by seed. These sets may be purchased from seedsmen, and that is by far the easiest way to grow onions.

They should be put into the ground at the earliest possible moment, but their place must be well prepared before they go into it. They are gourmands and require the richest kind of land. Plenty of well-rotted manure should be dug in; then some dried and powdered poultry droppings, bone-meal and wood-ashes should be well raked in. Place the sets in rows about six inches apart, if you select a large variety; nearer together for a small variety. Plant them so that the top of green just shows above the surface, and firm the soil about them well.

If seed is decided upon, prepare the bed in the same way. Sow it half an inch deep, and cultivate as soon as possible, never allowing weeds to grow. This is more important in onion culture than in the culture of any other vegetable, for the seedlings are so small that they are liable to be uprooted in the pulling out of large weeds. Take a steel-toothed rake, and allow the row of seedlings to pass between its teeth while drawing it along, thus loosening the earth but not disturbing the plants. If this is done frequently, weeds will not have a chance to grow.



A dainty long-rooted onion seedling

When the onion babies are six inches high, they should be thinned out until they are from four to six inches apart. If they are not growing rapidly enough, work in a little nitrate of soda.



The shallot needs no coaxing to grow (the bulbs should be parried)

In the fall the leaves begin to turn yellow, which shows that their harvesting time has come. The set plants should also be mature then. Now dig them up, leave them in piles on the ground to dry thoroughly, or take them to the barn, where they can be spread out on the floor, safe from the danger of being wet by showers. They may be stored in the root cellar, provided it is dry and cold enough, or they may be allowed to freeze and stay frozen all winter. This is accomplished by placing them in a barn, wood-shed or tool-house, after allowing them to freeze, and covering them with hay or sacking, which has a tendency to keep the temperature even, and to prevent alternate thawing and freezing.

There are many varieties of onions, large and small, and of varying shapes, round, flat and oval; also of different colours, red, yellow and white. I think that the white is preferable to the others, for it is firm in flesh and mild in flavour. Perhaps the most extensively grown kind is the Prizetaker, an improved Wethersfield. There are American and foreign varieties but those European varieties which come from warmer countries, from France, or Spain, or Italy, seldom mature in any section of the United States except in the South and in California.

There are small onions raised to be eaten raw, such as the English shallot, while others are grown for boiling and flavouring only. The shallot is a delicious spring vegetable to those who care for a more delicate flavour than that of the real onion. Sets planted in April will be of edible size in three

weeks, but they may be grown to a larger size if desired, and they are propagated by means of their cloves, as they seldom run to seed. Potato onions are also propagated by these divisions of the bulb called cloves, as they likewise never run to seed.

Seed may be sown in September, the seedlings wintered over, and transplanted in the spring. It is said that transplanted onions are always larger than those left in their original beds. My white Vauregard winter onions were sown April 24th, thinned June 7th, and those taken out were transplanted. They were very good onions by September, and I think that the transplanted ones did do a little better than the stay-at-homes. Welsh onions were not sown until August 5th, and by fall are pretty fair plantlets, ready for a slight covering of hay for the winter. It is said by the seedsman from whom these were procured that the leaves can be used for salad in the early spring. If that is true, the Texan shall have them and be happy.

Root maggot is their greatest enemy, and again carbon bisulphide must be used. They are also subject to leaf blight, and should then be sprayed with Bordeaux mixture, at intervals of a week or so. Smut also attacks onions, causing swelling which contain the black spores by which it is multiplied. Any parts that are affected with this fungus should be removed and burned at once, for the disease, or parasite, is liable to attack the bulb.

Onions may be boiled, and there are two theories as to the proper mode of doing it. One culinary authority advises that, after peeling all the dried skin off, they should be thoroughly washed, dropped into boiling salt water and boiled gently, uncovered, until they are tender. The other says: Prepare and wash, cover with boiling water, cover tightly, and boil for ten minutes; drain,



Shallot—ready to eat

cover again with boiling water, boil five minutes; drain, cover for the third time with boiling water, add a little salt, and boil now until tender, keeping them tightly covered all the time. When tender, drain thoroughly and steam off all the water by placing the uncovered kettle on the back of the stove. The two experts agree on one point, which is that the onions, when finished, should be covered with a cream sauce. They may be boiled and served with *sauce suprême*; or boiled, lifted from the water and a brown sauce made from a part of the liquor in which they were boiled, which is poured over the vegetable just before serving. They may be fried, baked, sautéed and prepared in various other ways.

They are one of the best stimulant vegetables we have, and should be more used by housewives than they are generally. There is a feeling that an abject apology ought to go with a dinner that includes onions, especially boiled onions. This notion is decidedly ridiculous and absolutely without justification, provided that the boiling is properly done. The onion contains a volatile, sulphurous oil which is the source of its lack of popularity in polite society, but it is claimed to possess the power of inducing sleep, and it has a firm hold both on man and on womankind.

GARLIC

Garlic is a member of the onion family, which never blossoms and is always propagated from the bulb. Unlike the onion, its bulbs develop clusters of ten or twelve little bulbs called "cloves." Those on the outside of the cluster are used for seed.



Americo garlic, a series of small cloves growing round a central clove and held in place by a white papery skin

They should be planted and cultivated in the same manner as shallot—sown in the early spring six or eight inches apart in rich soil, cultivated thoroughly and gathered when the clusters are well formed. The cloves have a much stronger flavour than onions, and are used more in the South than the North, though a good many recipes call for “a clove of garlic.”

They may be stored as onions are, in the root cellar, or wherever they will not freeze. They have no particular food value, and unless you are fond of a strong onion flavour, it would be a waste of time to raise them where garden space is limited.

HORSE RADISH

This might be called the “no-trouble plant,” for it does not care a bit whether it is cultivated or not. There is but one variety, just horseradish, and it is propagated from pieces of the root.

If you wish to raise this relish, select some out-of-the-way corner, make holes with a big stick or crowbar, and drop the roots into them one at a time, twelve inches apart, leaf end up; cover them over and leave them alone. The roots should grow long and straight, but they frequently double and twist. They are gathered in the late fall, when the skin is scraped off, the radish grated, covered with vinegar, placed in jars and sealed. If kept tight, it will



A quaint putting up of garlic, the roots bound to straw by a winding string

keep forever. Some people are very fond of it on meats, fish and particularly on oysters.

Horseradish sauce, to be eaten with cold roast beef, is made in the following manner: To four tablespoonfuls of freshly grated horseradish add one saltspoonful of salt and the yolk of an egg; mix thoroughly, add five tablespoonfuls of whipped cream, and lastly, very carefully one tablespoonful of lemon juice. If the horseradish is grated and placed in vinegar, press it as dry as possible and omit the lemon juice.

Stewed horseradish should be scraped and chopped fine, covered with boiling water and boiled, uncovered, for half an hour. Then drain and turn into drawn butter; heat again, and just before serving add salt. This is used the same as stewed celery. This fellow will run wild in your garden, if you do not place a curb bit upon him. He is simply a relish.



Horseradish roots take uncouth and fantastic shape

SEED AND SEED PODS WE EAT



Who first dared to taste them?

CHAPTER XIII

SEED AND SEED PODS WE EAT

THIS may strike some people as being rather an odd way of describing the following vegetables and fruits, but assuredly they belong under this heading. Some are distinctly pods, like the "string beans"; some are fleshy portions that hold the seed on the outside of them, such as berries. In some instances the seed alone is eaten, peas for example; in others, the seed is discarded and only the shell, or receptacle used, as in the case of the pumpkin. No matter under which subdivision it is placed, the vegetable is used after the blossoming season is over, and it is distinctly the reproductive portion that forms the food.

Seed pods may be cooked in so many different ways that they are more interesting to the culinary artist than leaves or roots. There are but few general rules to be followed for this class. Boiled corn should be cooked in salt water that is truly boiling; and tomatoes should be skinned before stewing. Eggplant may have the green juice pressed out before frying, if you choose, and it should not be peeled, when baked; neither should squash. Peas and beans should always be boiled in salt water, just at the boiling point.

and the kettle should be left uncovered; while okra must cook slowly, being started in cold salt water, with the kettle covered closely.

I cannot go into the chemical details of cooking vegetables here, for that is a study by itself, and one in which every woman is more or less interested. I sometimes think if new cook books were read with as much religious zeal as new novels, our families and pocketbooks would both be healthier and fatter; for it is an undisputed fact that as much money is wasted in our kitchens through ignorance as through carelessness.

TOMATO

The tomato is always spoken of as a fruit, for, like the apple, it is the fleshy portion which surrounds the seed that is eaten; but, unlike the apple, the seed also is used. This vegetable—for it will always be a vegetable to me—is a native of a warm climate, that of South America, and in old days it was considered a curious rarity in North America. Its name was then the "love apple," for it was so often used in courtship as to be highly prized by the damsel who received it from her preferred lover; and it was also much in demand as a mantel ornament. Great was the dismay among our grandmothers, when the younger generation began eating the fruit, for it was considered distinctly poisonous. The original tomato was very small, not much larger than a cherry, and it has been used in our country as an edible only during the last fifty years.

Coming from the tropics, it needs a warm spot, and as our outdoor season is not quite long enough, the seed must be started indoors, or in a cold-frame. If planted in the open, the frost would take the vines before fruiting. First of all, select your variety or varieties, make up your mind how many plants you will have and sow seed accordingly, for there is no use raising more vines than necessary.

We always have two kinds in our garden, large red and yellow egg. The large red is usually a different-named variety each year, for we like to make new friends in this family. The seeds should be sown the last of March, and the seedbox placed in a conveniently warm, out-of-the-way window. Unless the Texan is at home to do it for me, I am very apt to forget to close the coldframe at night. If that is not done I might just as well have saved myself the labour of sowing the seed in it, for I will have no result, except fond hopes blasted. In the house the plants cannot become frostbitten; and being under my eye, they are pretty sure to receive good care.



Seed pods we eat

The seedbox need not be large, but if a fair-sized one is procured, it will serve to start tomatoes and celery at the same time. Under such circumstances, leave a good space between the seeds, so that one variety may not disturb the other when being moved from the neighbourhood. To give you an idea how much seed to plant, one ounce will produce more than 2,000 tomato plants. I sowed three rows of three different varieties last spring, and each row was less than two feet long. The germination was extremely



The innocent red tomato, once held poisonous under the ironic name of love-apple

poor, but nevertheless I obtained more than fifty plants, considerably more than were set in the garden. Thirty-five plants produced enough fruit for table use all season, enough to preserve a dozen jars for us, twenty quarts to can, and all I needed for green pickle, as well as bushels for our friends and neighbours.

The seedbox should first be provided with holes for drainage, next a layer of gravel or charcoal—preferably the latter, as it keeps the earth sweet—then filled to within one inch of the top with a mixture of well-rotted manure, leaf mould and sand. Shake the box to settle the soil; sprinkle it lightly



The yellow egg-shaped tomato

but thoroughly, if dry; allow it to dry off slightly and then mark very shallow rows three inches apart. Sow the seed in the drills—not too thickly—barely cover it with fine soil, and firm either with the hand or a board. Sprinkle the surface again either with a bulb sprayer, or by dipping a whisk-broom in water and shaking it over the box. Keep the surface moist, but not wet.

When the seedlings come up, turn the box occasionally, so that they may not be drawn in one direction toward the source of light; and if the plants are too thick, thin them out. When the second leaves appear, they may be transplanted, or, if you have sufficient plants to allow for losing some, thin them out to three inches; otherwise, they must be lifted and set out separately, either in another box, or in pots, boxes, cans or any receptacle selected. This latter method will not check the growth, when they are set out in the garden, as much as planting in a second seedbox, where the roots are torn and broken each time they are lifted. Our experience shows also a difference of ten days or two weeks in the fruiting time. The seedlings may be set into tiny pots, and later shifted into larger ones; or put directly from their first home into something about five inches in diameter.

Be sure not to let the plants grow too tall and spindling; give them plenty of air and not too much manure. They should be set into the garden when the forest trees are coming into leaf, which, in this region, is about the middle of May. If a cold snap should come after they are permanently placed, protect them with inverted pots, newspapers, sacking or any covering that comes to hand.

Have the seedlings' home ready for them before they are moved. Decide which is the best place for them, if it has not already been allotted in the garden plan. Give them a warm spot, if you want early tomatoes. Perhaps you had some extra early peas on a fence or trellis; could not the tomatoes go there? Is there a tall fence that can be used as a division line, or wind-break? If so, try that, provided it be not already appropriated. Plant the vines against it, fastening the stems with tacks and a piece of tape, just as you would rose bushes in the same situation.

After the location has been selected, see that the soil has been well prepared, with thoroughly rotted stable fertiliser. If a crop has just been taken out, spread the manure on the soil and dig it in well. If the spot has been previously dressed, fork it over carefully before setting out the plantlets.

The vines should be two and one-half or three feet apart. Dig the holes, put in some bone-meal and wood-ashes, and if the soil is dry, fill up with water. Now is the time to bring along the seedlings. Slide the bottomless tin can, paper pot, or what not, off the board and lift the plant out of it; or take them up from the seedbox, in that case disturbing the roots as little as possible, and set each into a hole. The water has sunk into the earth by this time, so that the hole is a little deeper than it was. Draw the earth around the roots, press firmly, sprinkle one tablespoonful of nitrate of soda, or a trowelful of chicken manure, around the plant, not allowing it to come nearer than two inches from the stem; sprinkle a little earth over this and water again. Then, unless it be cloudy or late in the day, protect from the sun and heat.

No doubt you wonder why the nitrate is not placed at the roots, with the bone-meal and wood-ashes. For two reasons; firstly, because it would injure the roots; secondly, because the watering dissolves it quickly and carries the food in an available form down to the roots.

If the plants grow too tall and spindling, cut off the tops. I trust, however, the seedlings will be strong and sturdy, as all children should be, for a good start means much.

There are several ways of training the vines, the generally accepted one being to tie the main stem to a stout stake which has been driven into the soil near the plant. All side shoots are then cut off, and the main shoot is not allowed to grow any taller than the stake. Some allow three branches, one main stem and two side branches. Another way is to hold the vine, by means of soft twine or raffia, to a wire fence, pushing the ends of the stems through the wire. All unnecessary foliage is cut off, which is done either with the same care used in pruning a rose bush or by cutting the stems off with a sickle at the top of the fence. The former method gives the larger fruit, while the latter produces the greater quantity. I have spoken in "Vine Uplifters" of various other devices for taking care of this plant.

Tomato-rot and the giant green caterpillar are its most formidable enemies. Spraying with Bordeaux is the one thing to do for rot, and that is a doubtful remedy. It is necessary to burn all tomatoes affected with it, or the germs will fall to the earth and remain there over winter, ready for further evil work the following season. Green caterpillars are not very troublesome, and Bordeaux is their "cure." They are generally immense in size and few in number, so that a tin can full of kerosene and a small stick will quickly put them out of business.

The ground cherry, or strawberry tomato, is an entirely different plant. The bush is low-growing, rather spreading, and it has velvety foliage. The fruit, or seed pod, is enveloped in a husk, which is really the calyx of the flower, grown as the seed develops. The edible portion is about as large as a cherry, rather flattened at the stem end, and when ripe it is a dark, brownish red.

We found the plant in our old garden, growing everywhere, and, as we are not fond of it, we have calmly treated it as a weed, for plants from self-sown seed reproduce very rapidly. If you wish to try some in your garden, sow the seed in May, in hills three feet apart, thinning, when of sufficient size, to one plant to a hill. The berries—and they seem more like a berry than a vegetable—are ripe in August. They may be eaten raw by first removing the husk, or preserved like strawberries. Many of our neighbours are very fond of them and cultivate them carefully.

There are a dozen or more methods of cooking tomatoes, though one seldom sees them in other than the three most common modes: stewed, baked and scalloped. They may be paned, fried, stuffed, boiled, curried, or stewed with okra. They may be preserved, canned, and pickled; and withal

they contain no food value, though I think the human system would miss them sadly. Like most fruits, they are best raw, we think. They are peeled by being dipped into boiling water and removed after a moment of immersion, when the skin will slip off easily. The tomato should be thoroughly chilled before serving, and it may either be sliced or a small hole be cut in the stem end and the seeds pressed out.

The little yellow and red tomatoes make a very good preserve. Select one-half peck of sound, not overripe fruit; weigh them and allow an equal weight of sugar. Scald, peel, and, if possible, do not break them. Cut half a lemon and a small piece of ginger root into small pieces and add them to the tomatoes. Place all, including the sugar, into a preserving kettle, and it is a good scheme to cover the tomatoes with the sugar, as it makes them less liable to break. Allow the mixture to simmer gently for three hours. Fill jars or tumblers with the preserve, covering either with tops or with paraffine, and it is ready to store away in the closet. The yellow ones may be preserved with grated pineapple, omitting the lemon and ginger.

They may also be made into a sweet pickle. To do this, put into a preserving kettle one quart of vinegar and four pounds of brown sugar; mix one cupful of spices (whole allspice, whole clove and stick cinnamon), tie it in a cheese-cloth bag and drop into the kettle. Have ready with the skins



A green tomato stuffed with chopped cabbage and tied ready for the pickle-jar

removed, eight pounds of firm, ripe tomatoes—the peach, the yellow plum, or the red pear—any small variety. Allow the vinegar and sugar to boil, and skim thoroughly. Then drop the tomatoes in, not too many at a time, boil until translucent; remove carefully, place in stone or glass jars; drop more into the syrup, and so on until all the tomatoes have been cooked, then cover them with the remaining syrup. The syrup should be poured off and brought to a boil, then poured back again, for three successive mornings.

To can tomatoes for winter use, remove their skins, place in a kettle and boil for twenty minutes, skimming off the foam which rises; add salt to taste. Have the glass jars hot and sterilised, and with the rubber rings in place, for the filling and sealing must be quickly done. Place the hot jar in a pan of hot water close to the preserving kettle, and set on it a wide-mouthed funnel. Fill quickly, run a spoon handle down the sides to set free the bubbles, then screw or clamp, the sterilised covers on at once. The tomatoes must be boiling hot, and the jar must be air tight, for tomatoes would far rather spoil than keep. As an added precaution, some melted paraffine may be poured around the opening after the jar has become cold.

Another way of canning tomatoes applies to all fruits: Procure fruit-jar holders, or muffin rings, and place them on the bottom of a wash-boiler. If you intend to do much of this work, have a wooden lattice rack made to fit the bottom of the boiler. Fill the jars with whole, peeled tomatoes, add a teaspoonful of salt to each quart jar, and fill to overflowing with cold water which has been previously boiled to sterilise it. Place the lids on the jars lightly, and set them in the boiler, which is filled to half the height of the jars with cold water. Place the cover on the boiler, set it over the fire, and let the water in it boil for ten minutes. Then take the jars out, one at a time, and tighten the lid upon each without lifting it, for all the air has been forced out of the jars by boiling, and it would destroy all the results of the work to allow more to enter. When ready to use, open the jar, turn the contents into a saucepan, and stew gently or use according to any favourite recipe.

A little Canadian bride has told me of the method followed by our northern cousins for keeping whole tomatoes. Fine, ripe, perfect fruit must be selected, washed clean, and care be taken not to break the skins. Pack them into a stone jar, pour over a pint of vinegar, and a pint of cold water alternately, until the jar is full. This is a particularly useful way, for one can have fresh tomatoes all winter by taking them from the jar, washing in cold water and slicing; or they may be cut in half, the cut side dipped in

flour, fried brown and tender, and then covered with a milk gravy. This is a favourite Pennsylvania dish, ranking with "scrapple," and "beef and cream."

Green tomatoes are used for pickling according to various recipes. There are two theories in regard to preparing them. One is that green tomatoes must be chopped, salted and allowed to stand over night, after which a green liquid is found in the bottom of the bowl that must be thrown away as poisonous. The other method is just the reverse. I have tried both and find the latter to be the better. I will give you a recipe for piccalilli, though why it should ever have received the name is a mystery. My own cook book with tried and true recipes is one of my dearest possessions, for it contains things I know to be good, while strange books must have their contents proved to be reliable by an actual test. This recipe was given to me by one of my kind friends and neighbours, who presented me with some piccalilli made after this formula: One peck green tomatoes, two large heads of cabbage, twelve onions, twelve green peppers. These were washed carefully, the outer leaves removed from the cabbage and onions, the stems from the peppers. They were then all chopped finely in a wooden chopping-bowl with a sharp chopping-knife, and to them were added one-half pound white mustard seed, two pounds brown sugar, eight tablespoonfuls salt, four tablespoonfuls ground cloves, one and one-half gallons vinegar. This was thoroughly mixed, and then boiled for two hours. When I first made this piccalilli I found that this quantity of raw materials made two and one-half gallons (ten quarts) of pickle. Does that amount seem appalling? It did to me, but I notice it barely lasts a small family through the winter.

Catsup is made from ripe tomatoes, spices and vinegar, and may be strained or not, as preferred. The following recipe is from my own book, and it is extremely tasty:

Peel one bushel of ripe tomatoes; cut and boil until tender enough to rub through a colander. Add two quarts of vinegar, one scant pint of salt, one-fourth of a pound of whole cloves, one-fourth of a pound of allspice, one tablespoonful of pepper corns. Chop finely one red pepper, and five cloves of garlic. Add these, and boil until the quantity is reduced by one-half. It must then be strained through a fine sieve, bottled, sealed, and kept cool in the dark. I am sorry I cannot say how much catsup this quantity of material will make, as I have kept no record of that. It will keep indefinitely, and it is just as easy to make a large as a small quantity, for the extra time required is scarcely perceptible.

PEAS

Peas from our own garden, picked while the dew still glistens on the vines! There is magic in those words. If you have never eaten peas under these conditions, you cannot comprehend my meaning—if you have, I need say no more. To think they are barred from our home, except when the Texan is absent, for a drop of their juice when cooked poisons him so that he becomes an inflated balloon! But the girlies and I enjoy them, as should all good Christian country folk.

They are one of the most satisfactory things to raise, and no garden should be without them, unless the family be afflicted after the manner of the Texan. The seed can be planted very early, to avoid the spring



Sugar peas will snap as do string beans

rush. It germinates rapidly, runs in a short space of time, blossoms in profusion, and shows an exquisite flower. Hardly do the petals fall before the pods form and swell, until you take your basket upon your arm, walk down the row on a rare June morning and gather them, crunching, sweet and tender, the most delicious vegetable possible when in perfect condition.

There are as many varieties of peas as there are months in the year: "Earlies," "extra earlies," "middle crop," and "late"; "tall," "short," "fat," "sweet," "crinkled" and "smooth." Every taste may be satisfied, so choose your variety, and two are better than one, if you are fond of them, for you should have two crops, sown as the seedsman directs. Extra earlies should be planted as soon as the ground can be thoroughly worked. As the support is to be placed between the two furrows, make them four inches deep and six inches apart, if the vines are to climb on brush; or four inches apart if they are to climb on a portable wire fence. If you plant a dwarf variety,

the rows should be single and three feet apart. Vines of this sort save a trellis, but do not save the muscles of the back when picking-time comes.

The earth should be dug deep and made very rich. If it was dressed in the fall with manure, dig in now some poultry fertiliser, bone-meal or wood-ashes.

These plants are nitrogen-gatherers, you remember, so that potash and phosphoric acid are the two chemicals which we need to supply as the food they crave. Sow the seeds thickly, as they are rather doubtful of germination, and the plants should be close enough together to cover the trellis and yield a good crop. It is better to thin some out than not to have enough to form good, thick rows.

When they send out small tendrils at the end of the stem, it is a request for support, and you may know that is the proper time to put up brush or trellis. If your peas are to grow on a permanent support, plant the seed not more than six inches from it, because it is difficult for them to get a hold if it is too far away.

Garden peas, like sweet peas, require a goodly amount of moisture, and for this reason they are sometimes planted in a six-inch furrow, the seed being covered with four inches of soil, and the furrow still left two inches below the surrounding level. When the seedlings are four or five inches high, the balance of the soil is filled in. This places the roots below the drought line, and it is an extremely good plan to pursue for late crops. An extra protection in the way of mulch—hay, straw, clippings from the lawn—is also good, but not at all necessary, particularly if you have a satisfactory irrigating system.

If you wish a continuous succession of this vegetable, patches or rows may be sown every two weeks up to the first of June. With very special care they may be grown all summer, but extreme heat is liable to cause mildew, which either maims the vines badly or kills them outright. A fall crop may be had by planting late in the summer, say the middle of August, and this sowing should be ready for use the end of September, as it requires only about six weeks for peas to come to maturity.

There are wrinkled and smooth peas, and peas with edible pods. The smooth kinds are the earliest, as their seedlings are able to withstand quite severe frosts. Wrinkled seeds are used for the middle and later crops. Sugar peas may be planted early in May, and are a very nice variety to have if you are fond of pea soup. The pods as well as the seeds are edible, and may be

prepared in the same manner as green snap beans. Though very sweet and tender, they do not, to my mind, equal beans, as they have a peculiar, half-way quality, a sort of betwixt and between, neither peas nor beans. When the seeds are a fair size, they are extremely good eating, as nice as any pea I

ever ate, and the pods are unusually good for soup. I remember that when a child our whole family, many a time, made a meal just of pea soup, bread and butter. One needs nothing else, if this is well prepared. I here give you the recipe of a good friend of mine who is a perfect genius in the culinary art, everything she puts her hand to being delicious and dainty. Several other recipes in this volume came from her.



Seedling of the sugar pea

Pea soup: Save the pods of fresh peas, wash thoroughly and put them into a kettle with enough cold water nearly to cover them. (You see this is the same principle as that pursued with meat soup, cold water being used to draw out the juices.) Boil for an hour, or until they are soft enough to crush with a spoon or potato masher, thus separating all the juice. Strain off the liquid, leaving little behind except the woody fibre; measure it and allow an equal portion of milk. To every pint of milk allow two tablespoonfuls of flour and two of butter. Rub the flour and melted butter together until smooth, add the milk, and, when thoroughly mixed, pour this into the liquor from the pods. Any cooked peas that have been left over may be thrown into the soup and if you have a lot, put some through a potato press before adding them to contribute thickening. Just before serving, sprinkle in salt, pepper, celery salt to taste, and a *few* drops of onion juice. The result is a purée fit for a queen. Canned peas may be used, but a much greater quantity of them are necessary, as they have no pods from which to extract the juice.

The delicacy and sweetness of cooked peas depend entirely upon the way in which they are prepared, provided they are tender and fresh to start with. All vegetables and fruits should be picked in the cool of the day, preferably the early morning, with the rule-proving exception of strawberries, which are most luscious when warmed by the sun. Keep the peas in a cool, dark place until needed. Have a kettle ready with two quarts of *boiling* water, to which has been added one teaspoonful of salt. Wash the peas thoroughly by placing them in a colander, and allowing cold water to run through them. Drain well and then turn into the boiling water, which must be kept just at the boiling point, neither above nor below. Cook, uncovered, for about twenty minutes, or until tender. Drain again, add a little salt, pepper and butter, shaking the peas so that the seasoning will be thoroughly incorporated with them. Handled thus, they will not become mashed as they would if stirred with a spoon or fork.

They may be boiled, drained and served with a cream sauce; or boiled and piled into the centre of patties. The English like them boiled with mint, while the French cook them with lettuce. Remember, whenever you boil peas, that the water in which they were cooked, together with their pods, are the foundation for pea soup. This legume is a valuable food, both green and dried.

LENTILS

Most lentils are imported from southern Europe and the Orient, but they may be grown here with little effort, and they delight in a loose, sandy soil. The seed, which is always used dried, is the most nutritious of all the legumes, or nitrogenous foods, and it will take the place entirely of lean meat. Lentil soup is a farmhouse dish which the Germans use a great deal. The vegetable may be served in half a dozen different ways. The Egyptians cook it with rice and tomato, seasoning very highly. The Mexicans are extremely fond of lentils, using them much as the Americans use peas.

BEANS

Stringless or snap beans, wax, lima or pole beans are the common varieties. They are as easy of culture as peas. You may grow them either as climbers or as dwarfs. All except limas are generally raised in the dwarf varieties, and there is a growing popularity for the dwarf lima also, though we think this variety decidedly better when grown as a climber. It is a

warm-weather-loving plant, and it needs all the sunshine it can possibly get. When grown in bush form, the vines become very dense, and the pods hang in the centre near the earth, so that it is necessary to keep pinching off the ends of the vines which are bound to become climbers again. We have

friends who think we are positively crazy to cling to the old-fashioned variety, so you see the bush limas have champions.



Lentils, beloved of Latin tastes. The seeds are black, tan and reddish brown

Green-pod and wax beans are planted much earlier than limas. They are all of the legume family, nitrogen-gatherers, so they need principally phosphoric acid and potash. The ground should contain plenty of humus, as they require moisture to make a rapid growth. Slow-growing

beans are tough and tasteless; the rapidly grown are crisp and delicious.

Have the row thoroughly worked, because what looks like the seeds of this plant are really the first leaves which must force their way up through the earth, and a crusty ground retards them. Make a furrow four inches deep



Stringless green beans gathered while still wet with dew

PROPERTY OF
A. & E. COLLEGE

and plant the seeds thickly, say one-half inch apart if you have gone over them and selected the largest; more closely still if you are not sure they are fine stock.

Beans need thorough cultivation, but little other care. Their greatest enemy is rust, a fungus disease, usually more troublesome in damp seasons than in dry. The vines should have plenty of light and air; and a spraying of Bordeaux when the bushes are a few inches high, followed by another in two or three weeks, sometimes prevents rust.

Lima beans are subject to mildew, and it is aggravating to see those fine big pods, hanging in tempting array, all covered with a downy, white substance. Bordeaux for these fellows also, and if you find young plants badly smitten, it is best to pull them up and burn them lest they spread the disease.

Dwarf limas are planted in drills like those for green-pod and wax beans, while all the running beans are set at the base of the support assigned to them. Remember not to put fresh manure in the hill or drill, but a quickly available fertiliser, which contains little or no nitrogen.

If you wish to make assurance doubly sure in regard to lima beans, they may be started in sod, boxes or cans, the early part of May, and set into their allotted places when the earth and the weather are both warm. For sowing in the open, wait until the leaves are all out on the trees and you are pretty sure Jack Frost has taken his departure, for limas and his Frostship are not on speaking terms. Beans may be canned, or "jarred" as we prefer to call it, glass always being preferable to tin. Wash the beans thoroughly, break off the stem and flower ends, cut into half-inch pieces or not, as you prefer. In the limas only the bean is used, of course. Pack them into clean jars, fill up with boiled and cooled water, place the rubber rings in position, lay on the covers, and set the jars in the wash-boiler, following the directions given for tomatoes. Beans, however, require one and one-half hours. They may be served with a seasoning of salt, butter and pepper, or covered with cream sauce or drawn butter. Cold boiled stringless beans make an extremely nice salad. They may also be pressed through a sieve and made into cakes, with the addition of egg yolk and a little flour, or rolled into balls,



Lima beans: they must be planted eye down

dipped into the white of egg, then into cracker crumbs, and fried in deep fat. The skin of lima and of dried beans is considered quite indigestible. Hygienists recommend that it be removed before serving, but I am afraid a good many of us would go without them if each one had to be pulped before it was served. But they may as easily be well cooked as poorly cooked; that is, placed in boiling salt water, instead of being put over the fire in cold or tepid water to soak while the water is rising to the boiling point. This course is exactly the reverse to that pursued in soup-making. When the meat is placed in cold water, all the juices are drawn out into it and that is just what is desired; but as we prefer to retain the juice and flavour in our vegetables, the water for them must be boiling hot.

CORN

I have a good deal of the same feeling in regard to corn as our friend who doubts if any family ever had as much asparagus as it wanted. Are there people who ever had as much freshly picked sweet corn as they wanted? I believe not, or, if so, these may almost be counted on the fingers of the hand.

Like peas there are various kinds of corn, for varying seasons. Some are early, some medium, some late. There are white, yellow and black; sweet, very sweet, not sweet at all; watery, sugary and gluey. That is a large range from which to choose when you order your seed. It is an odd thing about human beings, that what appeals to one as delicious, another does not consider fit to eat. What seems queer to us in some of these vegetables is an every-day matter of fact to our neighbours. In corn the personal equation is so strongly apparent that it is necessary for each gardener to try different varieties and decide for himself which is the most palatable. We can but give our own personal impression, like or dislike of a given variety; and this, like experience, should come first hand.

If you are fond of sweet corn, it will pay to raise a very early crop, a middle and a late crop. The earth cannot be made too rich nor too fine, and it should be worked to a good depth. There are two methods of sowing seed, in hills and in drills. The former is the old-fashioned way still preferred by some gardeners and most farmers. The hills should be three feet apart each way, and six or eight kernels should be planted in each. Thin out, when large enough to distinguish between good and bad qualities, to the three best plants. For the drill method, run a furrow two inches deep, plant



A good stand of Egyptian corn

the corn fairly thick, and when well up, thin it so that the plants stand twelve to eighteen inches apart. In either case cover the seed to the depth of two inches.

The earliest variety may be planted as soon as the ground can be worked, a second and even a third two weeks later, if these are selected with a view to having one ripen after the other. The last planting should be made the middle of June, though we have had corn from our garden which was planted as late as the fourth of July.

Keep the earth well cultivated and draw the soil up slightly around the stalks, as they need a good foothold, being tall fellows, whose roots do not penetrate to any great depth, for they are surface feeders. For this reason it is necessary to cultivate often, that the soil may not become hard and baked.

The blossom of this plant is of two distinct types; that with the silk hanging out at the top of the ear is the female flower; while the male holds his head high in the world, and occupies the most lofty position, crowning the extreme summit of the stalk. Does it not seem odd that the same stalk should bear several female and only one male blossom? It is decidedly polygamic. This fact, very seldom realised, was oddly illustrated to us this summer when a young neighbour who has been at home in a garden all his life said to us:

"My corn grew so high it was shading my tomatoes too much, so I just cut the top off the bloomin' things."

"Had it tasseled?" we queried.

"It was just beginning. Why?"

We answered him with another question.

"Is there any corn planted near yours?"



Egyptian corn seedling. The side roots will run out as anchors to support the stalk

"No, not very near. Why?" An alarmed expression came over his face when we told him that the powder on the tassel fell on the silk fringe hanging from the ear, and that this powder made the corn develop and grow, otherwise there would be no crop. He was perfectly dumbfounded.

"Well," said he, "I've been raisin' corn, man and boy, this many a year, but I never hear tell o' that before."

We advised him to cut a tassel from our corn, which was then in full bloom, and shake it over each tuft of silk. He did so and secured a fair crop. There is a weird theory that, if one-half of the tassel is cut off there will still be sufficient pollen left to fertilise the kernels, and that the extra strength goes into the corn. Smut should be watched for very carefully. It is an enlargement of any portion, covered with a white, satiny skin and full of black spores, by which it is reproduced. This fungus should be cut off and burned to prevent the spread of the disease. Smut is apt to show first on the ends of the tassels, though it may come on the stalk near the ground or at any point between the two.



Shoe-peg corn - note the shape of the kernels

The best time to gather corn is just when you want it. Have a large kettle nearly full of rapidly boiling salt water. Go to the garden, pull the corn, husk and silk it at once and drop it into the kettle. If young, ten minutes will cook it. Lift with a fork, drain well, lay on a plate on which a napkin has been placed, fold the corners of the napkin over the corn and serve at once. Half an hour should not elapse between the time the corn is plucked and the time it is eaten. Then you will know what sweet corn is, and why genuine Americans eat it from the cob.

If it must be picked a considerable time before cooking, lay it in the cool, dark cellar, or on a closet floor, and do not pile the ears one upon the other. There are innumerable ways of pre-

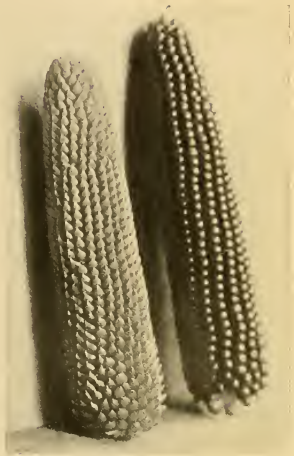


Evergreen corn

paring corn for the table, and almost every district in America has its favourite method. Sweet corn is distinctively American, both in birth and utilisation, being little used in other countries. It may be cooked with tomatoes or lima beans, made into gems or into soup. Corn fritters and corn pudding are both delicious, and much in favour, especially in the Southern States. The latter is prepared in the same manner as the former, the only difference being that the compound is baked, not fried.

To can corn, procure it as fresh as possible, husk and carefully remove all silk. Then cut down the centre of each row of kernels and with the back of the knife press out the corn, making sure of each diminutive golden heart, and leaving only the skin of each kernel on the cob.

Pack the pulp into perfectly clean glass jars, place the ring and the top in position, but do not fasten. Put the jars in the boiler and follow the



Popcorn, white and yellow



Smut on corn. In the broken bits the black spores can be seen, with their silky covering of white

directions given for tomatoes, peas and beans, allowing the corn to boil three and one-half hours.

In the olden days, the pulp was pressed out, spread either in a warm oven or in the sun. When thoroughly dry it was packed in jars or boxes, and easily kept all winter. To prepare it for use, the desired amount should stand covered with cold water over night, and be boiled in the same water. The Texan says this is so far ahead of canned stuff that I have visions of drying corn next summer.

It contains little nourishment, but is a delightful green food. The skin, like that of beans, is considered indigestible, therefore when eaten from the cob, each row of kernels should be scored. It is a good plan for the housewife to see that a sharp steel knife is placed by each plate for this purpose.

CUCUMBERS

It seems odd that this fleshy seed pod should be called a vegetable, when we always think of the same formation in a melon as "fruit"; the distinction is purely in flavour.

Cucumbers may be raised in exactly the same ways as melons, either in hills or around a sunken barrel. Like melons, also, they may be started in pots, cans, berry boxes, etc., or in a piece of sod in the coldframe, and transferred to the garden about the middle of May. They have also the same enemies as melons—flea-beetle, striped beetle, and downy mildew. The vines should be kept sprayed with Bordeaux from the time the second leaf appears, and planting radish with the cucumber also helps to protect it from the ravages of the flea-beetle. Keep the young plants well dusted with ashes or land plaster, if the first application of Bordeaux proves ineffective in destroying these pests.

There are several distinct types of cucumber—long, short, smooth, and spiny. Some varieties are raised for pickling; others to be sliced for table use. The pickling cucumbers are sometimes called gherkins, and they are gathered when quite young. For brine pickles a larger size is gathered, because these are to be sold singly or in bulk, not in bottles like the vinegar and spiced pickles. For ordinary pickling, gather the young cucumbers when about one and one-half or two inches long, place them in a stone jar and cover with boiling hot brine strong enough to float an egg. Let them stand for twenty-four hours, then drain, wipe dry, place in a clean jar and cover with one quart of boiling vinegar, to which has been added one onion,



Cool and refreshing cucumber

twelve whole cloves, one ounce of mustard seed, and three blades of mace. In two weeks' time they are ready to use.

I know you will say just the same thing that I said when the cucumbers for pickling came in at the rate of three, four, or perhaps a dozen in a day. "What, stop my work and pickle those few paltry things each day? Never! The game is not worth the candle." But the Man from Out West smiled a superior smile and told me how "Auntie Howe" (it is never "my mother" with him) used to keep hers. She took a stone crock, covered the bottom with cucumbers, covered these with one-quarter of an inch of coarse salt; then put in another layer of cucumbers, another of salt, and so on until the cucumbers were used up. On top she placed a round board, just a trifle smaller than the crock and a good-sized stone to hold it down snugly. The next pickles that came to the house were added to the jar. By the time the crock was full, a little water was poured in if the brine did not cover the cucumbers. A cloth was laid over the top, the board replaced with its weight and the outfit stored away until a convenient time for pickling came. A few horseradish leaves placed under the cloth prevented moulding and the pickles would keep thus for months, even for years.

When the psychological moment arrives, you may proceed to pickle all of your hoard of cucumbers, or only part of them, as you wish, proceeding as follows:

Remove the stone, the board and the cloth and you will be astounded at the scum which has risen. Wipe it off from the surface of the brine and around the edges of the crock and wash the cloth and board. Remove such

cucumbers as you wish to pickle, replace the coverings and the rest will keep for another pickling bee.

Cover the subjects for execution, or rather for consumption, with cold water, soak them three days, changing the water every day, and wipe each carefully before dropping it into the preserving kettle, which contains enough vinegar to cover the cucumbers. Heat to the boiling point and turn occasionally with a wooden spoon. Do not cook the pickles, just heat them through, then remove from the vinegar, place in bottles and cover with fresh cold vinegar, which may be spiced or not, as you prefer. A few leaves of the accommodating horseradish will again prevent moulding.

Table cucumbers are usually served raw, although they may be cooked in diverse ways. Always pick them in the early morning, and keep them in a cool, dark place. An hour before serving pare off the skin, slice as thin as possible and place in ice-cold water. Drain thoroughly when ready to carry to the table, and cover with this French dressing: One tablespoonful of vinegar, three tablespoonfuls of olive oil, one-fourth of a tablespoonful of salt, and a dash of pepper, mixed very thoroughly.

Fried cucumber can scarcely be distinguished from fried eggplant, and it



The branching habit of the martynia and the orchid-like blossoms



Martynia proboscidea resembles the old woman who lived in a shoe

is prepared in the same way, by paring the "seed pod," cutting it into slices about one-half an inch thick, dipping into egg which has been slightly beaten, then into cracker crumbs which have previously had a little salt and pepper mixed with them. Fry the slices in deep, hot fat, drain on paper, and they are ready to serve.

They may be stuffed with breadcrumbs and chopped nuts highly seasoned, or with chopped raw meat in place of the bread. The cucumber is cut in half, the seeds scooped out, and replaced by the selected mixture, the halves put together again and tied with string. They are then baked an hour and a half, or until tender.

Cucumbers may also be served boiled, covered with cream sauce, in which case the skin and seeds should be removed. They form in this way an excellent substitute for boiled onions.

This vegetable is considered difficult to digest if eaten raw, but it is quite the reverse when cooked. There is an erroneous impression abroad that they contain a poisonous substance which is drawn out by soaking in cold salt water, but this merely makes them flabby and tasteless, so that they become positively harmful. They are not supposed to have any special food value, though they formed one of the chief articles of diet of the Egyptians.



Nature's arrangement of seed in the martynia pod

MARTYNIA

Martynia ranks with okra in oddity and beautiful bloom, although the latter is more inclined to be tropical than oriental in character. The blossoms resemble pink orchids, being what one might call "lipped," with one or two orange blotches upon the

lower lip. The foliage is velvety, and the plant has a peculiar habit of growth. The main stem divides, sending out two side branches almost horizontally, while the first bloom rises straight from the centre of this flattened angle and just over it to form a vertical continuation of the main stalk. After the first blossom has appeared the tip of each of the two main branches produces a flower, and then side branches start, making in a short time a decidedly bush-like form.

The curiously curved seed pod suggests either the old-time court shoes, or skate runners, according to the fancy of the observer. It is used for pickling, and rivals the cucumber.

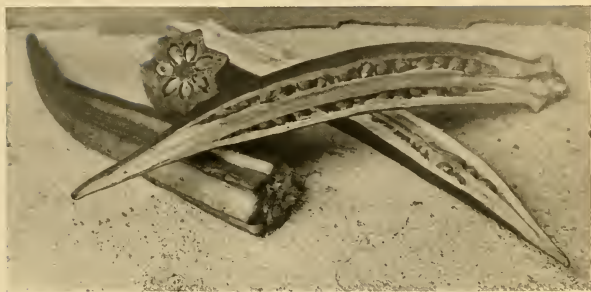
There are two varieties, *Craniolaria* and *Proboscidea*, but for all practical purposes they are the same, though there must be a botanical distinction. The blossoms are so nearly alike, they could not be distinguished were it not for a slightly bluer tinge in *Proboscidea* than in *Craniolaria*; though, to tell the truth, one has to have an excellent memory to remember which is which. I always have to resort to my garden records.

I think the *Proboscidea* is slightly more prolific than the other.

The seed should be sown in May, an inch or more apart; then thinned or transplanted to eighteen inches, though twelve will do, if you are cramped for space.



Martynia craniolaria, of proper size for picking



Nature chose the seven-rayed star as her pattern for arranging okra

The seed pods, fuzzy, unique things, begin to fill out about June 10th, and by May 20th they are ready for picking. Select those of the desired size, just as you choose the cucumbers for pickles. By harvesting the pods well the plants will keep up the supply until killed by frost.

These seed pods may be substituted for okra, and cooked in the same way, for they are also mucilaginous. They do not impart quite such a fine flavour, and I should not advise using them when okra can be obtained. The following is a recipe for pickling martynias, the fate they nearly always meet. These quantities of spice and vinegar are the proper amount for two quarts of young martynias:

Wash the seed pods clean, place in a crock or convenient receptacle, cover with brine, that is, salt and water, strong enough to float an egg.



The poor okra seedling had a hard struggle above ground, but the roots felt equal to anything

Let them stand three days, then drain and cover with cold water, allowing them to stand once more for twenty-four hours. At the end of this time, wash thoroughly and dry. Place them in the preserving kettle and cover with cider-vinegar, adding one tablespoonful of whole allspice, one of whole cloves, three bay leaves, and twelve pepper corns. Boil for one minute, bringing to the boiling point as quickly as possible. When cold, bottle or place in stone jars, covering with the liquor, and in two months they are ready for use.

OKRA

This is an indispensable vegetable in most Southern and in all Creole houses. It is the basis of gumbo soup, etc., in fact, the vegetable itself is sometimes called gumbo. The young seed pods are the portion used, and they are full of a gelatinous substance which imparts a smoothness to all dishes into which they are incorporated.

The pods must be gathered when young, as they become tough and woody in maturity. They may be washed, cut into slices and stewed with



The beautiful okra flower—straw-yellow and rich crimson



Vegetable marrow squash, ready to garner



A group of squashes and pumpkins

corn, tomatoes, or rice; or boiled alone as a vegetable dish, and in this case the following recipe is good:

One quart of okras, washed and cut into small pieces, covered with one pint of water, is cooked gently for half an hour, or until tender. It must then be seasoned with one tablespoonful of butter, one of vinegar, a teaspoonful of salt and a dash of pepper.

Okra soup is rather a remarkable mixture. It is really a vegetable soup, made of okra, tomatoes, onions, fresh corn, lima beans, and rice.

The okra plant is extremely easy of culture, and beautiful enough to be worth growing, aside from its value as a food, which, slight from the point of view of nutrition, is notable from that of taste. The large seeds should be planted in May, and the seedlings thinned, or transplanted, so that they will stand one foot apart.

The blossom is as beautiful as a Japanese hibiscus, both being members of the mallow family. The petals are a delicate straw coloured satin, while



A vegetable-marrow seedling. Is it not a beauty?

the centre is a blotch of the richest garnet velvet. The pod is long, pointed and slender, generally octagonal, though sometimes smooth and round.

To keep over winter the pods may be canned like beans or tomatoes, or cut into slices across the pod, strung on a cord and dried as you would dry herbs. When using this dry okra, soak the pods in cold water for a little while before cooking, then boil them in the same water. If your seed pods become too old, they can be cut into bits and tied in a piece of cheese cloth. This bag can be put in the kettle with tomatoes, corn, beans, or whatever dish you are concocting, and the flavour of the okra

will be imparted without the woody portion being in evidence. Of course, the okra bag should be removed before serving.



Pumpkin, sometimes called cow-pumpkin. The seeds are held in the web of fibres



Patty-pan squash, a delicious summer product

SQUASH AND PUMPKIN

Squash makes one of the most delightful and dainty of summer dishes, in our estimation. They are fleeting and delicate in flavour and texture, provided you secure the proper varieties. Crooknecks and yellow squashes are generally strong in flavour, while patty pans, vegetable marrow, and others of that ilk are extremely delicate.

Their culture is exactly the same as watermelon, even to the spacing of the hills, and their enemies are the same. An interesting fact in regard to all these vine fruit-vegetables is that some flowers are male, while others on the same stem may be female. It is possible to have fine, healthy, strong vines which will not produce a single seed pod. This is due to the fact that there have not been enough bees nor insects near your vines, for these winged creatures carry pollen from the male blossom to the female, fertilising the latter, so that its ovary grows and becomes edible. The two blossoms are quite distinct, the female having a tiny bulb on the stem behind the calyx, while the male is just a plain flower. If the pollen is carried from one to the other,

the bulb grows and develops, the flower in front of it falling off; but if not fertilised, the bulb, as well as the blossom, separates from the stem.

There are summer squashes and winter squashes, the former having a tender skin, while the latter has to be cut open with an ax. To me the finest of all the summer squashes are the patty pan and the vegetable marrow, the latter a favourite English variety.

The usual winter squashes include Hubbard, Marblehead, and Boston marrow. They grow to an enormous size, weighing more than a watermelon, and will keep all winter, provided they are not subjected to a temperature lower than fifty degrees.

Pumpkins are sisters to the summer squash. They are richer in flavour and are usually preferred for custards and pies, though they may be baked or boiled, prepared in the same way as any other vegetable. They can also be dried for winter use by being cut into thin strips, and hung in the sun, then packed in tin boxes or glass jars. Soak these dried pieces in cold water over night and they will be ready to use in the same ways as fresh pumpkin.

Vegetable marrow squash may be peeled, cut into small pieces, dropped into boiling salt water, and cooked until very tender. It should then be thoroughly drained and pressed through a colander. Returned to the pan in which it was boiled, it should be set on the back of the stove, uncovered, and allowed to steam till perfectly dry. Add a teaspoonful of butter and a dash of pepper before serving.

They may be baked, fried, stewed with cream sauce, or prepared by any of the recipes for cucumbers.

They are long and slender, rather greenish, and so extremely tender and tasty that they are becoming quite the rage.

MELONS

Musk and water melons, two of the most delicious fruits of the vegetable garden, are seed pods of goodly size, especially the latter, which sometimes weighs forty or fifty pounds when grown in the South. They, like the tomato, are warm-weather plants, and taste better when gathered fresh from the vines, where they have ripened normally, than when they have travelled from foreign parts. Muskmelons are more frequently raised in the home garden than watermelons, for the simple reason that they occupy less room. Being extremely heavy eaters, special dishes must be prepared for them, and plenty of them.



Temptation: in the shape of Netted Gem melon



The citron melon: for preserving: white flesh and terra-cotta seeds

When the weather is warm and the leaves well out upon the trees, make the melon beds, which should be three feet apart. Dig out a hole, four inches deep and twelve inches across, and place into it fine old manure full of humus, some bone-meal and wood-ashes, or hen manure, until level with the surrounding soil. Put three or four inches of soil over this and plant the seed, fifteen or twenty of them, together with some radish seed. Melons are slow of germination, compare with radishes. The striped- and the flea-beetle love both of



Fun in the melon barrel before the melons claim it

them, but if the insects can feast on radish leaves, they will let the melons alone, so that the poor radishes can be used as cat's-paws! When the melon seedlings are well up, thin so as to leave only the three finest plants on the hill. Mr. Striped Beetle will now make a prolonged call unless made unhappy by Bordeaux. Invite him to move on, by means of this compound, and you will find that mildew also scarcely rings the bell or lifts the knocker, but departs, bag and baggage, to houses where there is a more hospitable welcome.

Keep the soil well cultivated until the vines run and cover the ground,

when further disturbance of the soil will injure them. The best fruit comes on the side branches, so pinch the ends of the runners off to force side growth. Do not let the vines grow much more than two feet long, but force the strength into the fruit. Melons require plenty of water, as they are really a forced crop. If you plant them in hills, make a slight ditch around each and fill this with water every night or every other night.

The Man from Out West has a few wonderful memories of his boyhood farming, and his greatest joy is to renew his youth in our garden. One of his pet recollections is the melon barrel—ergo, we had a melon barrel. This is a clever scheme. Take a hogshead or barrel, cut it in half, horizontally. Bore two inch auger holes around the sides, making several in every stave. Sink this device into the garden in the place selected for melons, and leave the top six inches above the garden level. Fill the half-barrel with manure and fertiliser, bank well-fertilised earth around it and plant the seeds there. Next fill the barrel with water, which sinks into the manure, and flows out through the side holes, placing manure-water under the seeds where the roots will soon find it. Nothing is better for this purpose than soapsuds.

When the melon is ripe, it parts from the stem with slight assistance, and the finest flavoured fruit is that ripened on the vine. When the melons have set, place a board under them so that they may ripen off the ground.

Watermelons are raised in exactly the same way, by placing them four or six feet apart and allowing but one vine to remain to a hill. Around the half barrel, three or four vines could grow, radiating in different directions. The best test for a ripe watermelon is to place the ear close to it, then press hard with the hand, and if the fruit is ripe it will yield slightly, and a cracking sound will be heard. Tap it with the fingers, and if the sound is hollow, it is ripe.

There are innumerable varieties of both melons. Rocky Ford muskmelon is famous, also the Netted Gem. Muskmelons are divided into two distinct groups, the netted skinned, and the scabby (or warty) skinned, the latter being called cantaloupes. They both grow with pink, orange, red, yellow, green, and white flesh, one even with black; and some varieties, such as the pineapple-melon, may be trained on a trellis, where it will ripen thoroughly and quickly. A melon with a fine, rough skin is supposed to be the sweetest. The fruit should always be served very cold. Georgia Rattlesnake watermelon is a general favourite, though there are many others just as good. There is but little waste to a watermelon, for the white part of the rind,

pickled in sugar, vinegar, and spices, makes a very acceptable dish to serve with meats.

The preserving melon which we call citron is used for sweet pickle in exactly the same manner as watermelon rind. The round exterior and the heavy weight are about the same as in a watermelon. The seeds are few and a beautiful Indian-red. Preserved citron, used in cakes, mince pies, etc., is made by cutting the fruit in quarters, removing the seed, and then soaking in cold water for five days, changing the water two or three times a day. It must then be boiled for two hours, strained and cooked slowly in syrup for half an hour.

The syrup should be made thus: For each pound of fruit allow one pound of sugar and one-half cup of water. This should be melted and hot when the citron is put in. The fruit stands in the syrup over night, is then lifted out with a skimmer, and the syrup boiled down about one-half, before it is poured over the fruit for another twenty-four hours. The citron is next dried in the sun, a process which requires several days. When thoroughly dry, roll in granulated sugar and it will keep indefinitely.

EGGPLANT

This vegetable is seldom raised in the home garden, presumably because one has to "sit up nights and nurse it." It requires a warm season, and must be started either in the house or in a coldframe late in February in order to secure a summer long enough to ripen its fruit. One plant matures only three or four pods, therefore plant accordingly. It is very wise, indeed, almost necessary, to keep the seedlings in a pot, can or basket, so that the growth may not be checked when they are set out in the open. One of our village's chief citizens set out a small plantation of eggplant and garnered never a one, probably because they were not in an anti-setback seedling starter. Guard against flea-beetle and potato-bugs, also against a fungus which sometimes attacks them. Keep well dusted with land plaster or ashes for the insects, and well sprayed with Bordeaux for the objectionable growth. Give them the warmest position possible, so that they may not be cut off by frost before their mission in life is accomplished.

There are numerous varieties, some edible, some grown for ornament only. The large purple is considered the best for culinary purposes, and it is called by various names, such as jet-black, black beauty, purple-black, etc. There is also a white variety which we are very anxious to try. We had two seed

pods on our bushes this year, but the frost caught them before maturity. The seedlings were so badly attacked by flea beetle in May that I thought they never would pull through. The scarlet Chinese ornamental eggplant was planted at the same time and its seedlings suffered from the same cause, but the Orientals from the Flowery Kingdom seemed to have more stamina than the round white, and made very good growth. They are the queerest things, these Celestials, with sharply pointed, fantastic leaves, and spines on both the upper and under sides of the midrib as well



It takes an Oriental to place thorns on the upper as well as on the lower side of a leaf. The unique blossom is that of the Chinese scarlet eggplant



The beautiful white eggplant, with violet blossoms and silvered leaves

as along the margin. The flower resembles the potato and the fruit is scarlet, small and indented like a pumpkin.

The blossom of the round white is of exquisite violet colour, rather large and showy. The seed pods are edible about the middle of August, provided the plants have been well brought up. There are various ways of preparing this handsome purple seed pod for the table. Nothing can be more palatable than it is, when well prepared, and nothing more untempting when spoiled in the cooking. The commonest way to serve them is cut into slices, dipped into egg, then into cracker crumbs, and



Fruit of the Chinese eggplant—truly scarlet, though photographs show it black

fried in hot, deep fat. When crisp and golden brown, they are excellent. The secret lies in having the fat just the right temperature, 325 degrees Fahrenheit, and in draining the slices thoroughly on brown paper afterward. Baked or boiled, they are delicious, while they may be prepared with other vegetables or with eggs or meat, to great advantage. Though its food value is slight, the eggplant adds most pleasantly to the variety of our daily diet.

PEPPERS

Quaint, little, fierce-tempered, red-headed creatures—but we love them for all that! What would the housewife do without peppers, red and green, of varying sizes, shapes and hotness, to help her out in her culinary art? They are indispensable to that high seasoning so earnestly sought by epicures. Full well does the housewife who takes pride in her pickles and preserves realize how essential they are. Peppers are easily grown and they fully repay for trouble in their beauty of leaf and colouring. Take good care of the seedlings, and when past their infancy they are but little trouble.

The foliage is a handsome, rich, glossy green; while the seed pods pass through various hues on their way from green to red.

Over twenty varieties of peppers are named in the catalogues. Their colours embrace black, scarlet, yellow, and purple. There are large round, heart-shaped, cherry-shaped, long, pointed, slender, and one is the shape of an elephant's trunk. Trying one or two new varieties each year should keep up the garden interest for several consecutive seasons. The seeds should be sown under cover in March, thinned or transplanted when two inches high into a pot, can or berry basket, and set into the garden early in May.

The large sweet pepper, so called because the seed is the only hot portion of its anatomy, is used in diverse ways as a vegetable, and in many cases it plays an important part in pickles. It is usually stuffed, either with meat and breadcrumbs, or with breadcrumbs and chopped nuts; sometimes, especially in the South, with tomatoes; while in Mexico the range of materials used for stuffing is fairly bewildering. They may also be stewed, and made into sauce to be served with meat.

Peppers are sometimes called chillies, certainly not because of the temperature they impart, but from their native country, Chili. This is a familiar word in all Mexican and Spanish homes, where they form an ingredient in many favourite dishes. By these people, the hot peppers are always much preferred to the sweet.



Peppers, green and red

I wish I could give you a good recipe for Mexican tamales, but I have never found one that produced the real article. They are mixtures of corn-meal, chillies, and sometimes chicken, rolled in a cornhusk and steamed for a long time. They are as quaint and fascinating as their country, and the cry of the tamale woman, as she passed down the street at dusk with a large jar poised on her beautifully modeled head, is like the cry of some wild bird, "*Compraran ta-ma-les!*" Do you want some for tea? Open the casement window and clap your hands. She glides across the street, lifts the jar from her head, divests it of its innumerable wrappings and serves you as many tamales as you desire, smoking hot, fragrant and delicious. Tamales made in an American kitchen could not taste the same. I know those do not that are made in my kitchen. Two reasons account for this: real tamales are made of ground corn prepared like hominy, by the use of lye; and they are cooked in the open air over a charcoal brazier.

Peppers, red and green, are used in almost all pickles. The wee cayenne chili and the cranberry varieties are very hot. Paprika is made of dried and ground sweet chili, while tabasco oil is made by soaking bird peppers in olive oil. The Mexican morning appetiser is a goodly number of the fiery cayenne peppers eaten raw before breakfast, just as we eat fruit. Americans have not yet developed asbestos mouth and throat linings, so we cannot adopt this custom.

Green peppers may be cut open crosswise, the seeds removed, and the cavity refilled with finely chopped cabbage, the two halves reunited and tied with string or raffia. They are then dropped into boiling sweet pickle (four pounds brown sugar, one quart of vinegar and a cup of whole allspice, cinnamon and cloves mixed) and boiled until tender. They may then be packed in stone jars, and the pickle poured over them. For three successive mornings the pickle should be poured off, brought to the boiling point and poured back again.

PEANUTS

These belong to the legumes, or nitrogen-gatherers, plants good for both man and soil.

It is truly a pea, not a nut at all, and is called so merely because the pod becomes hard, forming a shell.

Once the Texan and I almost drew swords over this plant. He insisted that the nut was a tuber and I that it was a seed pod ripened under ground.

"Did you ever raise them?" said he.

"No," I replied; "I studied it out of a book when I was a little girl in short frocks."

"Books!" in utter disgust, and yet he both respects and loves them. "I have raised them and I guess I ought to know. Why, father and I had them in our garden every summer when I was a boy."

I said no more. What could I say? He held experience against my childhood's learning. However, I bided my time and one spring bought some seed, the largest I could find, and planted them in one of the most conspicuous portions of the garden. When they were several inches high he noticed them, saying:

"What are those? They look like peanuts."

"Right you are," I remarked.

"What do you want to raise them for? They are not weird vegetables."

You see he had a notion that year that everything in the garden must be weird.

"I want to prove my side of a little argument we once had in regard to them, and if you feel in a sporting humour I will bet a box of candy — my kind — that peanuts are seed pods ripened under ground."

To my amazement and disgust he was not in a sporting humour. It may have been that he did not care for that kind of bet, since he is not partial to candy, and he knew that if he won I would eat it, anyway.

When harvesting time came I gathered the entire family, for I wished witnesses to prove that my point had been well taken. There was utter and blank astonishment on the Texan's face. His memory of boyhood days had played him false, for we dug those nuts and found the flower stems in various stages turned down into the soil, and the seed pod ripening in the dark.

Peanuts are natives of warm countries and succeed best if grown where there are long, moist summers, preferably near the seaboard. They can be grown in any place where corn matures, but it is wise to start them in sod or a receptacle in a sheltered spot before placing them in the open. A light soil full of humus and rich in lime, potash and phosphoric acid is best suited to their culture.

Gathering must take place before frost, which injures them. Be sure to put the vines and roots in the compost heap, for they are stored with nitrogen.

Roasted peanuts are a very common food; shelled and salted they are used as a relish. Peanut butter is becoming an every-day article of food. Peanut meal (made by grinding fresh nuts fine, but not pasty) may be used in muffins, griddle cakes, and various other compounds. Peanuts are chopped fine and added to marmalades, and they are also used extensively in confections.

They are extremely nourishing and deserve a place on every sideboard. It would be much wiser to fill little stomachs with these nuts rather than with sweets. One of our little one's devoted admirers always has his pockets full of them when he comes calling, and the children are privileged to hunt for them. He is dubbed "the peanut man," and to the end of time he will remain the peanut man in this household.

MUSHROOMS

No doubt you wonder why mushrooms come into this chapter. One might think they belonged in the same category as cauliflower and the globe



A puffball mushroom. The velvety part corresponds to seed

artichoke, but they are analogous to seed pods, for the head is filled with a fine black powder, known as spores. This powder falls to the earth and germinates, developing a new growth which resembles a bluish-white mould called mycelium, or sparon, and that is the real plant, while the mushroom we eat is the portion which corresponds to the flower in other plants.

Mushrooms require a warm, damp, and shaded spot, and they thrive best when artificially cultivated from October to May. If it were not for a tiny maggot which comes near destroying them in the summer time, they could be grown the entire year. The wild varieties grow in old meadow lands and waste, swampy places. They appear in the latter part of the summer, so that between these wild fellows and those cultivated in a mushroom bed, one is supplied with this vegetable during the greater part of the entire year.



An edible fungus

The puffball and the maned Agaric are probably the commonest of the wild varieties, but as there are numerous poisonous kinds, one should be able perfectly to recognise the edible ones before gathering any.

Mushrooms may be cultivated in a barn cellar, a house cellar, a vault, an abandoned shed, a greenhouse or in houses specially constructed for them.

The temperature must be always between fifty and seventy-five degrees.

The beds are usually ten inches deep and as wide as convenient working permits, that is, generally from two and a half to three feet, and the length is governed by the amount of space you are disposed to allot. The beds may extend over the entire floor, if plank walks are placed so as to divide them into convenient widths; or the beds may be a series of shelves, one upon the other, allowing sufficient space between them to put in the earth, and to pick the mushrooms as they ripen. If the cellar be unheated, the beds should be fourteen inches deep; if heated, a depth of ten inches will be sufficient. If you use the house cellar, board up the portion allotted to mushrooms, or darken the beds themselves.

The manner in which the beds are made is nine-tenths of the secret of mushroom-growing. The material must be hot, fresh, horse manure, with or without straw, but it should be from animals which have been fed hay and

grain alone, because if vegetables have been fed, the refuse is liable to produce disease among the mushrooms. Place in the bottom of the bed six inches of this moist manure and trample it well. Then fill up with fresh manure, which has been turned several times, and to which has been added a small quantity of loam that has been cooled down to a temperature of 115° Fahrenheit. A thermometer inserted in the centre of a pile of manure will give the temperature. The layer last added should be well trampled, or, in the case of shelf beds, pounded down with a brick or maul. The whole bed may be made of the prepared and cooled manure, if preferred. The surface of a bed should always be hard, smooth and convex.

When the beds are made, cover with hay or straw and leave them until the temperature has been reduced to 90° F. The soil should at all times be moist, but not dank.

Spawn can be purchased from any good seedsman. It comes both in bricks and in flakes—the former from England, the latter from France. Bricks are pieces of earth from a mushroom bed where the plants have grown until the ground is covered with white mould. Then it is cut into bits about eight inches long, five inches wide and one inch thick, thoroughly dried, and shipped to all parts of the civilised world. Flakes are made on the same principle, except that the spawn is grown in manure, very full of straw, and carefully dried.

To plant the bed, break the brick or the flake, whichever you prefer or can secure, into pieces of which the average brick will make a dozen or so. Remove the straw or hay, from the bed, mark it off in rows one foot apart, make holes in these rows nine inches apart and two or three inches deep. Set a piece of spawn in each hole, cover it up and firm hard, packing the whole bed over again. It is wise to replace the hay or straw in order to keep an even surface moisture. In eight days remove the mulch and cover the entire bed with two inches of light loam, which must also be firmly compacted. This insures a firm footing for the mushrooms when they appear. When this important event happens, the temperature of the room should be kept between fifty and sixty degrees, and the bed should not be in a draught, lest the mushrooms catch cold. Never allow the bed to become dry, but water it, when necessary, with a very fine rose spray. Sprinkling the walls around the bed every day keeps the atmosphere moist.

About five weeks from the time of spawning the mushrooms begin to appear, and a bed usually continues to yield for three months, and even longer,

if conditions are particularly favourable. Pickings must be made every day, for if a mushroom "goes to seed," that is, bursts and drops its spores, the plants are weakened and the crop lessened. To pluck, take the mushroom by the cap, twist and bend it slightly and it will become freed from the bed. Fill up the hole where it grew, and be sure never to leave any stumps in the bed, for the decaying of these will cause the spawn to rot. Be careful not to lay one mushroom upon another, but spread them all out separately on a tray or board.

To raise mushrooms on a small scale, take a deep milk- or dish-pan, fill it with prepared manure, firm well and proceed as with a large bed.

It is just as necessary to prepare a large amount of manure for a panful as it is for a bedful, because the principle involved in preparation is the same. This principle is the fermentation of the interior of the pile, which must be very closely packed. When the heat becomes so intense as to turn the outside of the pile white, it must be made over by using the outside of the first pile for the centre of the second. If the pile again turns white, build it a third time.

Now if you make a small pile, just enough for a panful, there is not sufficient density to start internal fermentation, and the chemical properties in the bed will not be the same. That will cause varying success with the crop raised upon it, and therefore, if you have space, remember it requires no more time nor money to start a bed than a panful. We shall have to try a pan in our cellar, for I am afraid I have not ambition enough to plant a large bed, not being fond of mushrooms, though the Texan is.

The chief enemies of the mushroom are wood lice, which must be trapped and killed. Fill a flower pot half full of hay, laid invitingly on one side, and the wood lice will confidently hide there. Each morning they can be shaken out of the hay into a dish of kerosene, and this cheerful illuminant will do the rest with neatness and despatch.

There are endless varieties of mushrooms, far too numerous to mention here, and each locality seems to have its favourite. The puffball is the largest of all, some specimens weighing as much as six pounds. These are considered by some to be the finest flavoured, but I have heard such long and heated discussions upon that subject that I fear I may get into hot water if I take it up.

Some think there is a great mystery about mushroom culture, and certainly there are many failures. The brick or flake may not be good; but

there is now a new method of sending out spawn—only this is not spawn, but the spores, bottled and sealed, which are claimed to be infallible.

One of the Texan's favourite stories is about a friend who decided to make his everlasting fortune on mushrooms, and who spent much time and money in preparing and planting a bed. The germination, or growth to be more exact, was very poor, though he did get a limited number of very fine specimens. When these appeared, he went to the grocer on his way to business to make a sale of his treasures. The bargain, a thrillingly lucrative one, was concluded quickly, but when the financier reached home, his mushrooms had "quit" business, leaving, like many other bankrupt concerns, merely shrivelled and worthless assets. Utterly disgusted, he promptly and violently threw mushrooms, bed and all, out into the back yard on top of a good layer of snow, jotted down his profit and loss on his experience account, and commenced to study up ginseng literature.

The following spring, he was much astonished, almost paralysed, to find the entire back yard covered with mushrooms as fine as heart could desire. Again he visited the grocer to find the buying price even higher than before, but alas! again was the axe to fall. Upon his return home, he found to his horror that the small children of his neighbours had trampled every individual of his quick-growing, bank-account accelerators into the soil, good and hard. I do not think it would be safe even to whisper "mushrooms" in his neighbourhood now, and he is also wisely growing cold on ginseng.

There are numerous ways of preparing this recluse vegetable for the table, the most common being to brown it in hot butter. Mushrooms may be boiled, or baked; they may be fried, after dipping in egg and then in cracker crumbs, by dropping them into deep fat. They flavour various sauces and soups, may be canned, and also made into catsup.

They have no food value, but are simply one of the frills and furbelows of the dining table for which some people will spend their last cent.

STRAWBERRIES

Even though your garden plot be small, do, I beg of you, have a few strawberry plants. They require but little care, in fact, even without any they will yield some fruit, though, of course, it requires time and labour to produce the best of anything.

The best season for setting out plants—for this fruit is never raised from seed except to produce a new variety—is late in August or early in September.



Strawberries as they should be served coming from your own garden

The roots will become well established by winter and a good crop of fruit may be expected the following June. The plants may be set out in April or May, but as a rule they will not produce fruit until the following season. The largest crop is borne the second year, and after that the vines should be uprooted and young runners started in another spot in the garden for a new bed. I can hear you sigh and say, "Don't you consider that any trouble?" Well, it certainly sounds as if it were, but in reality it is not so terrible. You see, the vines send out shoots after the fruiting season, and these shoots or long stems have a crown of leaves at their extremity. This lies flat upon the ground, sending down roots from the under side of the stem, which shortly become new and independent plants. The process can be assisted by pinning

down the joint with a twig or a hairpin. The long stem reaching from the parent plant can be severed, the new plant lifted, and set elsewhere. The first cost of a strawberry bed is the greatest, for, unless your stock runs out through neglect, or you tire of certain varieties, there is no need to buy new plants. If you live in a garden-loving community, it is a good deal of fun to "swop" runners, for then your varieties will be numerous and they come to you without expense.

The strawberry likes comfortable lodging and good food, and, unlike human beings, is willing, even glad, to pay good prices for these accommodations. Select the rooms you choose to rent them, remembering that they should be three feet apart, and the beds and chairs not closer together than one foot. Measure your space before admitting these boarders, so that you may not take in more than you can accommodate. They ask for deeply dug, finely pulverised beds, into which has been incorporated a goodly supply of manure; and for their diet they enjoy wood-ashes and bone-meal better than anything else.

If you set out the plants in the early autumn, have ready some straw, hay or leaves, also some well-rotted manure. In October put on a good mulch of manure, and, when the ground has frozen fairly hard once or twice, usually



Mosquito netting protects strawberries from the birds

toward the end of November, cover the entire bed with a light coverlid of hay, straw, leaves or boughs. Do not put the covering on too early and do not take it off too late—one of the most common errors of the amateur. The protection is designed to prevent freezing and thawing, or to keep an even temperature. In March, when the days begin to grow warm, uncover a plant and see if the crown is starting to grow. If it is, uncover all the crowns, so that the light and air may reach them freely. In April the entire covering should be removed, and the ground thoroughly cultivated between the rows. Some bone-meal and wood-ashes should be worked into each row, and every vestige of weed pulled out, root and branch. Though the covering may be left off, it is wise to cover the earth between the rows lightly, and to tuck a small amount of hay under the leaves of each plant. This serves a two-fold purpose: the forming of a mulch, to conserve soil moisture, which is extremely valuable for strawberries, and to protect the plant from contact with the sand, from the danger of rotting, and from injury by storm.

Instead of "rows," some gardeners prefer having "strawberry beds," usually made three or four feet wide, and as long as desired, where the plants are allowed to root every runner. Thus a complete mat is formed, making to my mind a difficult proposition when weeding and picking are in progress.

When the fruiting season is over (and by planting early, medium, and late varieties this season may endure from May into July), runners will start from each plant. Now you may have fun, for you can very easily secure pot-grown plants by sinking a soil-filled pot into the earth, where the runner has decided or been directed to take root. Place the runner in the pot and fasten it down with a wire hairpin. In a few weeks the stem connecting the new plant with the old vine may be cut off, and the pot left where it is until the roots are stronger. It is then lifted and put into the new bed, or given away, or meets whatever other fate is assigned to it. Of course, it is not absolutely necessary to make pot plants; in fact, very few people do. It is merely another illustration of how fine root systems, kept in confinement and undisturbed when transplanted, gain in thrift and in time. If you take runners in July and set them into a new bed, you will have just about equal success as with pot-grown plants set out in September. After you have secured the runners you wish, keep all others cut off, as the plant will waste its energy in producing these offspring, instead of conserving its strength for fruit the following year.

Strange as it may seem, some strawberry blossoms are imperfect, containing the ovary only and, unless planted beside perfect blossoming varieties,

no fruit will set. Be particularly careful in selecting varieties to note this fact. Catalogues always state which are perfect and which imperfect, so that one need never be at a loss; but it is a point one might entirely overlook, unless forewarned.

Most varieties have perfect blossoms, but the Bubach, Haverland, and Marie Sample are imperfect, therefore be careful when purchasing them that you also secure a perfect blooming variety as next-door neighbour. The strawberry blossom is as handsome as its fruit; therefore we reap two harvests.

There are little friends, callers, lodgers, neighbours, or pests, whatever one is minded to call them, who enjoy strawberries just as much as man does. They are sometimes called "robbers," instead of "robins," for they are early birds, helping themselves by the first rays of dawn; and man may take what is left, which I assure you does not include the largest berries and never those upon the sunny side.

The Texan came in one morning, fairly weeping, figuratively speaking.

"What is the matter?" I asked.

"I have been saving the fattest, biggest strawberry you ever saw, for you. Last night I said to myself: 'That will be ready in the morning and the Little Mother shall have it for her breakfast, cool and sweet and served upon a green leaf platter.' Now look! those pesky robins have eaten the rosiest part out of it, leaving a hollow mockery. They are out there 'sassing' me now, just as though I had no right to be in my own strawberry patch!"

"The mean little things," I cried.

"Oh, mother," a small voice piped, "you wouldn't call the dear robins mean, would you?"

"Well, darling, they are not exactly mean, I suppose, but they might have taken another berry."

"But mother, they wanted the very biggest grandfather berry!"

"I know, dear, but so did we, and as we have had all the work to do, I think the robins will have to take the small berries."

"I tell you what we'll do," said the Texan. "We will give them one row all to themselves, and we'll cover the rest with mosquito netting, so they can't get at them."

This was certainly a fair deal, so the rows were promptly covered with netting, stretched over home-made croquet arches and pegged down with clothes-pins. It was very easy to pick the fruit by lifting a section and

recovering again immediately; but some wise robin pecked a hole in the netting immediately over a fine berry, while others deliberately crawled under the netting, ate their fill and crawled out again. Still we had many more berries, and perfect ones at that, and our consciences did not prick us even a little bit. The netting will last two seasons, if rolled up when dry and stored where you can find it the following spring. Ours met another fate; it was buried under the hay. If you have an oversupply of fruit, be sure to can and preserve some of it for future use. The principle is to sterilise jar and fruit, and sugar may be added, or not, as preferred. The following method of canning is as satisfactory as any: Pick over the berries very carefully, to see that no imperfect or overripe fruit is kept. Place them in clean jars, fill to overflowing with cold water, lay the lid on with the rubber ring in place, then set the jars in the boiler with cold water and boil, as directed for vegetables, for ten minutes. Seal the jars without removing the lids. If you wish the fruit sweetened, allow one pound of sugar to one pint of water, boil and cool. Use this syrup in place of the cold water. Fruit syrup may be made by washing and straining the berries, and allowing one pound of sugar to one pint of juice; boil ten minutes and bottle while hot. Strawberry jam is made by washing the fruit, and adding one pound of sugar to each pound of fruit. Boil gently, stirring often until quite thick.

There are two dozen or more varieties of strawberries of varying colours, sizes, shapes and times of ripening. Palmer and Excelsior are very early; but I think the very earlies are inclined to be extremely acid. Among the latest are Gandy, Arnot, Brandywine and Midnight; while Sharpless, Glen Mary, Dunlap and Mammoth are among the medium ripeners.

The Sharpless is one of the largest and it is usually raised for exhibition purposes. The flavour is fair, not the best, and the berry inclined to be hollow, so that it will not keep at all, as we discovered to our sorrow, after our entire patch had been planted with them. The plants were secured in a great hurry and came to us under the name of Crimson Cluster, not from a nursery, I am glad to say, but from somewhere in the countryside. We have substituted the Bubach, Gandy and Marshall varieties, and we look for great things this spring. Our Sharpless were beauties, though, and we frequently gathered twenty-five pounds in an evening, from a small patch. Nick Ohmer, Brandywine and Morgan are highly flavoured; while Gandy, Arnot and Pride of Cumberland are good keepers. Be sure to purchase your berry plants from someone who has good stock and knows his business. Making



Blackcaps, or black raspberries

a bed involves too much time and labour to allow for experimenting with inferior plants.

RASPBERRIES AND WINEBERRIES

Raspberries are the joy of many people, and the horror of others, for they sometimes poison as peas poison the Texan. Strawberries also have this effect on some people, and I know of one individual who has to take her berries covered with red pepper, a rather doubtful enjoyment. The training and culture of raspberries should be the same as for blackberries, though they bear fruit at different seasons, and thus make the berry patch a continuous feast of varying flavours and colours.

There are black and red raspberries, the former usually called blackcaps. The red berries are much stronger in flavour than the black, which are very mild. Their colour, instead of being true to their name, is a very dark red. But quite the sweetest raspberry is the Golden Queen, a light straw-yellow variety. It was a perfect delight to us to find one growing in a neglected corner of our old garden, and you may be sure it has been given a place of honour in the berry patch.

In this part of the country we have what is called the wineberry. I cannot find any notice of it in books, so I presume it must be a species of raspberry. If you ever hear of any, be sure to secure some vines, for the fruit is as dainty as possible, with a very mild winery raspberry flavour, and a beautiful, translucent carmine-red colour. It is not a good-keeping berry, and therefore not much grown by market gardeners. The vines may be placed beside the raspberries and blackberries and receive the same sort of

care. The blight is not as noticeable on raspberries as on blackberries, but it is wise to keep them well sprayed with Bordeaux. They occasionally have leaf mould, but are more subject to rust than to anything else. As this is a contagious disease, the affected vines should be pulled up and immediately burned.

Did you ever make red raspberry vinegar? It is a favourite beverage with us at any season of the year, and it will keep indefinitely. It is very simply made, thus:

Cover three quarts of red raspberries with one quart of good cider vinegar and let them stand three days; then squeeze out all the juice possible and strain through a very fine sieve or a jelly-bag. Measure the juice and to every pint allow one pound of sugar. Let this simmer for twenty minutes, then boil for one; cool and bottle. Pour one inch of this syrup into a tumbler, fill the remaining portion with cold water, and you have a most refreshing drink, and one so easily prepared that you are never at a loss when an unexpected demand is made upon your hospitality.



A neat way of training climbing berries

BLACKBERRIES AND DEWBERRIES

These two berries are sisters, though one climbs while the other trails. The dewberries afford a very good crop between other crops, for they ripen after the raspberries and before blackberries begin. To me they are much more agreeable than blackberries, and though smaller have a milder and a sweeter flavour.

Blackberries should be set four feet apart, and the rows at least three feet from each other, for the thorns on these vines make picking a difficult matter when they grow so closely together that they interlace. Always train blackberries either to stakes or along a fence, and do not allow them to run wild, or you will lose the best fruit. One method is to drive a stake at each end of a row of bushes and run wires along each side, keeping the vines in the middle. A wire fence is the neatest, and by far the easiest way of keeping the vines within bounds. Set locust posts about six feet apart, and stretch one or two inch meshed chicken wire upon them, fastening with good-sized staples. The young shoots can be woven in and out the wire, and all the branches be kept closely trimmed, except at blossoming and fruiting time. Dewberries, being trailers, need no support, and they cover the ground with a beautiful close-growing mat of leaves. The plants should be set three or four feet apart and kept well pruned, except in fruiting season.

When planting out, first mark the rows, measure the distances for the plants, dig a good hole where each is to go, put in some bone-meal, wood-ashes and manure, then mix thoroughly with earth before setting the plant. If these have come some distance and are at all dry, put the roots in a bucket of tepid water for an hour before setting them out. This will fill the roots so full of moisture that the plants will wilt much less when exposed to the



The top of a blackberry vine shorn of its beauty by blight

sun and air. Set the roots fairly deep, work the soil well in around them, firm with the foot, water before the hole is quite filled up, and then cover even with the surrounding level. Each fall give a good dressing of manure to protect the roots, and in the spring, dig in some bone-meal and wood-ashes.

The secret of having fine berries is to keep the vines properly pruned. As soon as the fruiting season is over, cut out *all* old wood. This may sound like rank heresy, as the time-honoured custom is to do this work in the fall. It may be done at that season, or at any time before the sap starts running in the spring, but you are allowing great quantities of strength to go into the old wood all the summer by leaving it, and that wood is of no earthly use, as it will never bear again. By cutting out this old wood, as soon as its usefulness is past, you make all the strength go into the young shoots, which will bear the next crop. Do not allow too many of these youngsters to grow either; three or four canes to a plant are sufficient. Spread them out along the fence and they will soon completely cover it.

The plants may be set out in the fall or spring. We prefer the former season for this fruit, as well as for strawberries. The plants are liable to be too far advanced, when shipped in the spring, and the shock to their system is so great that they will need the whole summer to recover. Great care must be taken to protect them thoroughly during the cold months, when set out in the fall; but if the end of September finds them in their new home, they have a pretty fair chance of getting root hold before very cold weather.

If the vines have not been pruned before leaving the nursery, cut them back well, allowing no old wood to remain. It is easily distinguished from the new wood, as it has a brown bark, instead of a tender, green skin. Cut the new canes down to three or four buds, and see that broken roots are cut off clean and crushed ones removed. These vines are easily propagated, for shoots come up in all sorts of inconvenient places, and have to be cut off or dug out. When separated from the main stem these may be used as new plants.

Blackberries are subject to a leaf mould, which is very annoying and discouraging. Keep the vines well and strong and in rapid growth, and the troublesome disease has but little chance. Spray every two or three weeks with Bordeaux, the first time when the leaf buds are about to open. Do not spray while the blossoms are out, for you might injure the fertilisation of the flowers and thus diminish the crop of fruit. There is a peculiar curl, or blight, which also attacks them. I have found no record of it and no cure, but as it

is still a rare thing to have the shoots thus blighted we need not worry yet awhile. When the trouble comes in full force, experts will give us the preventive as well as the remedy.

Black and dewberries may be canned in exactly the same way as strawberries, and blackberry syrup made after the strawberry recipe. Blackberry mush is a most dainty, refreshing and nourishing dessert. To make it place one quart of blackberry syrup on the stove to heat. When it has reached the boiling point, add one tablespoonful of cornstarch, moistened with a little water.

Cornstarch and flour should always be mixed to a thin paste with either cold water or cold milk before being used as a thickening, for the simple reason that otherwise the flour or cornstarch would form in lumps, the outside of which would cook immediately while the inside would still be flour or cornstarch. When they are mixed with a cold liquid and poured very slowly into the boiling syrup, or whatever it may be, and this boiling something is stirred constantly, each grain of flour is cooked separately. Hence the finished product will be smooth, instead of lumpy.

But to go back to blackberry mush—a pinch of salt should be added and the dish is ready to serve, accompanied by a pitcherful of rich cream. Blackberry jam is very good, though some people consider it too seedy. All jams are made in the proportion of one pound of sugar to one pound of fruit, and the combination boiled until quite thick. Besides being a table dainty, these berries have medicinal qualities.

CURRANTS AND GOOSEBERRIES

These two fruits come, practically, under the same heading. They are diminutive trees, and are very interesting to have in the garden. They fit in nicely between rows of berry vines and are the first fruit after strawberries. The bushes should be set two feet apart, and the rows two and one-half to three feet apart, for thorough cultivation is necessary. This spacing also permits the growing of melons and cucumbers between the rows, as the vines of the latter do not occupy space until the fruit is harvested.

Red and white currants make a pretty, appetising breakfast dish, picked in the early morning, thoroughly washed—for Bordeaux is likely to be on them—and piled in a cut glass or silver dish with a border of their own leaves. Always serve the currants on the stem, if eaten without sugar, but if your



The exquisite currant blossoms that promise the exquisite berry

family prefer them sweetened, strip them from the stem and serve with powdered sugar, unless you are barbarians, like the Texan, who always eats his laden with granulated sugar and swimming in ice-water.

There is no fruit which takes the place of currants for jelly. They contain just the proper acid, and certainly possess a gorgeous colour. Gather the fruit for this purpose just before it is ripe, as ripe fruit is too watery and will not "jell" well. Crush the fruit, without removing the stems, warm it to draw out all the juices, and turn into a jelly-bag to drain over night. If you wish clear jelly, do not squeeze the bag out; if you are not particular about the transparency of the finished product, the fruit may be squeezed at once, and not drained over night. A friend of mine who makes quantities

of the most beautiful jellies has invented a device which I have copied on a smaller scale, and I give you a photograph to illustrate it.

The hoop is of heavy wire, the cloth a loosely woven, unbleached muslin. The advantage of this over the common jelly-bag is that there is a broad space from which the jelly may drip, while the old-fashioned kind allowed it to drip from one corner only. By changing the balance of this hoop bag, you start the liquid flowing from another portion of the pulp, and it may be stirred very gently, which is a further advantage.

The juice strained, it should be measured, then poured into a preserving kettle and brought to a boil as quickly as possible, but not allowed to burn. Boil rapidly for just twenty minutes, and remove the scum as it rises. Before you place the kettle over the fire, measure an equal quantity of sugar—"a pint is a pound the world around"—and place it in agate pans, which are set into the oven to warm. If the oven is very hot leave the oven door open a little, so the sugar may not scorch. Stir often, and, if a little should melt, do not worry. When the juice has boiled twenty minutes, add this sugar, stir constantly, allow the whole to boil just two minutes and take it from the fire. Have the jelly tumblers hot, and fill at once. If the jelly is not stiff enough when it cools, we have to call in the sun to help us. Place the tumblers upon a tray, cover them with glass and set in the sun for three days. Then pour a little melted paraffine over the surface of the jelly, cover the tumblers with tin tops or paper, and set them away in a cool, dark place. Such jellies keep fresh for years, for they are made of pure ingredients without colouring matter or gelatine, and many are less expensive than the "boughten" ones.

Gooseberries are beloved by our English cousins, raw, stewed and in



My improvised jelly-strainer. Note how the strings pass over the ceiling hook

the form of tarts. They are surely good for us, too, and the very name makes one's mouth water.

I had always thought them exceedingly tart, but to my amazement I found them extremely sweet and luscious when fully ripe. They become a



By shifting the weight the juice is made to run through a different part of the bag

dull red when fit to eat, and are soft and tender to the touch. The Texan dotes on them, and he coaxed me to have some in the garden. I needed but little coaxing, I am sure, for it is a delight to raise a thing of which any member of the family is extremely fond. We are all won over to the gooseberry, and look forward to its ripening time. You see, the gooseberry of commerce is the green, unripe thing known to those who receive the fat of the land from the corner-grocery garden plot. The fruit may be made into a sauce, or preserved like other small fruits, but generally few can be obtained.

Keep the bushes well pruned, and watch carefully for the currant worm. He comes like a thief in the night, steals to the under side of the leaves, and when you visit the garden next morning they are riddled.

Give the vines a good dose of Bordeaux, mixed with a little Paris green, and be sure to spray the under sides of the leaves. If you have time, or courage, to pick off all the worms you can find before spraying, you will be doing great work, for this means sure extermination.

The blossoms of these two bushes are beautiful, tiny, yellow things that hang in clusters in the axes of the branches. Gooseberries have thorns, lots of them, while currants are mild and peaceful, never picking a quarrel with anyone. Both of these berries have mammoth varieties. The cherry currant is much larger than the ordinary variety, and "goose-gags" are the giants of their family.

CHAPTER XIV

PLANTING TABLE FOR VEGETABLES

Planting-Table for Vegetables—By Edith Loring Fullerton

A CONDENSED GUIDE, SHOWING WHEN AND HOW TO PLANT SEVENTY-FOUR KINDS OF VEGETABLES, HOW TO CULTIVATE THEM, AND WHEN THEY ARE READY TO EAT—ADAPTED TO THE SMALL HOME GARDEN

MARCH is the time to sow seeds in the hotbed, if you want to gain a month; sow in April and you may gain a fortnight. Outdoors sow seeds of a few hardy vegetables, especially peas, and even corn, in March, for if they are ruined by frost it is a small

matter in the home garden. Moreover, the young plants can be covered on frosty nights by newspapers or boxes. What is folly for the truck gardener is good sense for the home gardener, because he has so little at stake.

Dates for Planting.—These can never be exact, but there is no use in being hopelessly vague. Therefore, New York City is taken as a standard. In reckoning dates, allow six days difference for every hundred miles of latitude. North, later; South, earlier. The following dates are those of an average season

ALMANAC	THE SOIL	TREES AND WEATHER	TENDER VEGETABLES	HARDY VEGETABLES
March—first half	Too wet	Trees dormant	Sow indoors	Sow indoors
March—second half	Best land fit to work	Red maple in bloom	Sow indoors	Sow indoors—risk a few out
April—first half	Plowing season begins	Trees budding	Sow indoors	Sow all early crops outdoors
April—second half	Most of plowing done	Leaves out	Sow early crop outdoors	Sow main crop: transplant early
May—early	Weeds humping	All danger of frost past	Sow main crop: transplant early	Sow last of main crop

Tender Vegetables.—The following are injured by even a slight frost and should, therefore, not be planted until all danger of frost is past, *i. e.*, about May 1st: Beans, corn, cucumber, egg-plant, melon, okra, pepper, pumpkin, squash, sweet potato, tomato.

Hardy Vegetables.—The following, if sown outdoors, or properly hardened before transplanting from hotbeds, will endure a frost. About April 15th is the time to sow the main crop; March 15th the early crops (outdoors). Asparagus, beet, borecole, broccoli, Brussels

sprouts, cabbage, carrot, cauliflower, celery, corn-salad, cress, endive, horse-radish, kale, kohlrabi, leek, lettuce, onions, parsley, parsnip, pea, radish, rhubarb, salsify, sea-kale, spinach, turnip.

Planting Table for Vegetables—Continued

NAME OF VEGETABLE	WHEN TO PLANT		DEPTH TO PLANT (inches) S=Seeds R=Roots	DISTANCE APART (inches) th=thin tr=transplant	READY TO EAT (Figures mean days)		ITEMS OF INTEREST
	Early Crop	Main Crop			Early Crop	Main Crop	
Artichoke, Globe	March indoors	April or May	S. $\frac{1}{2}$ R. deeper than before	tr 24 x 36	Sept. to frost	Next summer	The green scales around the flower bud are boiled and eaten with French dressing. When done bearing for the year, the flowering stem may be cut back to ground and shoots blanched like celery. Plant shoots and suckers deeper than before.
Artichoke, Jerusalem		April or May	Cut to 2 eyes	12 x 36		Aug. to frost	Tubers may be eaten raw or cooked in various ways. Blossom, a diminutive sunflower.
Asparagus		April or May	S. 1 R. 6	tr 12 x 24	Third year	April June	Two-year-old roots may yield some the second year. Beds last twenty years or more. In the fall cut down all foliage and burn; then dress with salt and cover with one foot manure. Cut beds lightly first yield. Sow radish with asparagus seed.
Basil, sweet		March	$\frac{1}{4}$	tr 8 x 8		June	Just before blooming cut back to three inches. Dry the leaves and bottle. Fragrance like cloves.
Beans, Lima	April cold-frame	May	2	th pole 30 x 36 th dwarf 20 x 24		Aug. to frost	Plant seed with eye down. Manure should be used only to hold moisture; bone-meal and wood-ashes make a good fertilizer. Seeds may be started in frames, in pots, cans or sods, to secure an extra early crop.
Beans, snap and wax (dwarf or bush)	May	June to Aug.	2	th 12 x 24	45	45	Plant one inch apart, eye down. Late varieties bear longer than early. A deeply dug rich soil is best. Do not use fresh manure. Three or four plantings enough for a small family. Sow every two weeks for succession.
Beets	April May	June to Aug.	1 $\frac{1}{2}$	th 6 x 18	50	50	Soak seeds over night in warm water; this hastens germination. The "thinings" may be transplanted.
Borage		April or May	$\frac{1}{4}$	th or tr 10 x 10		20	Young leaves used in flavouring beverages or boiled for greens. Flavour resembles cucumber. Blossom very pretty. Excellent food for bees.
Brussels sprouts		May or June	$\frac{1}{2}$	tr 12 x 18		150	Cultivate the same as a late cabbage. Young buds in angles of leaves are eaten. Should be touched with frost before picking.
Cabbage	Feb. Mar. indoors Apr. outdoors	May or June	$\frac{1}{2}$	tr 24 x 36	100	100	Ground should be very rich; liquid manure applied during August very beneficial. Late crop may be stored for winter use in cold cellars or pits.

Cardoon	May or June	$\frac{1}{2}$	tr 24 x 36	120	Roots perennial, need slight protection over winter. Leaves blanched, used like asparagus or served as a salad; bitter. When grown, the leaves must be blanched by tying, wrapping in matting or banking up. Blanching requires four weeks.
Carrots	Apr.	$\frac{1}{2}$	th 6 x 18	100	Sandy loam full of humus; deeply dug. Early crop must be used as soon as large enough. Late crop may be stored in sand in cellars, or stored in pits.
Carnip	May to Sept.	$\frac{1}{2}$	tr 20 x 24	40	Young leaves used for seasoning. Whole plant may be dried when in blossom.
Celery and Celeriac	Feb. in hotbed	Barely cover	tr 2 x 4 tr 5 x 48	170	Two transplantings necessary from first to second seed beds, two inches apart, then into trenches in the garden where it is to be blanchd. Rich soil; plenty of moisture. Celeriac a large rooted celery. Eat the root. Do not blanch.
Chards, Swiss Beet	April	$\frac{1}{2}$	th 12 x 18	60 to frost	A beet whose leaves instead of root are eaten. The whole leaf eaten like spinach, mixed with sorrel; or the midrib, which is white and fleshy, served like asparagus.
Chervil	Apr. to June	Barely cover	th 4 x 12	45	Used like parsley, beautiful foliage; rather sweetish flavour. Chief ingredient of "fines herbes."
Chervil, turnip-rooted	Aug. or Sept.	$\frac{1}{2}$	th 5 x 12	Before frost	Root edible; treat like carrot; pull roots just before frost and store in a pit or root cellar. Cover with sand to exclude the air.
Chicory	Apr.	$\frac{1}{2}$	th or tr 6 x 12	100	Leaves boiled like spinach or blanched and used as salad. Roots ground, dried and used as adulterant for coffee.
Chives	Apr.	R. as deep as before	12 x 12	May to Oct.	Leaves cut and used as flavouring; a delicate onion. May be kept in the house all winter.
Corn, sweet	June to July 4	1 early $1\frac{1}{2}$ late	Hills th 36 x 48 Drills 24 x 48	55 to 90	Fairly rich soil, thorough cultivation, plenty of moisture at roots for best success. Tall varieties require more room than short.
Corn-salad	Aug. or Sept.	$\frac{1}{4}$	th 6 x 6	60	When sown in the fall, protect with leaves or straw over winter. A good substitute for lettuce.
Cress, garden	Apr.	$\frac{1}{4}$	th 3 x 6	40	Good substitute for water cress.
Cress, water	Apr. to June	S. or R. in shallow water	th 6 x 6	28	Excellent for brooks. Can be grown in garden.

Planting Table for Vegetables—Continued

NAME OF VEGETABLE	WHEN TO PLANT		DEPTH TO PLANT (inches) S = Seeds R = Roots	DISTANCE APART (inches) th = thin tr = transplant	READY TO EAT (Figures mean days)		ITEMS OF INTEREST
	Early Crop	Main Crop			Early Crop	Main Crop	
Cucumber	Feb. Mar. indoors	May to July	$\frac{1}{2}$	th 48 x 48		50 to 75	Plant several seeds in an inverted sod for early crop. In hills in the garden for late. Sow six seeds to hill endwise, thin to two best plants to a hill. Thin garden plants when striped beetle has disappeared. Leaves boiled like spinach or blanched and used as salad.
Dandelion		Apr.	$\frac{1}{4}$	th 6 x 6		Next spring	Also propagated from seeds. The roots should be used like salsify and when young. Bitter. Used by Japanese. Set crown two inches deep.
Dock		Apr.	R. 2	10 x 10		90	Plenty of heat to start plants, then accustom them to cold before setting into garden. Rich soil and moisture needed.
Eggplant	Feb. indoors	Mar. indoors	$\frac{1}{2}$	tr 36 x 36	80	80	Fine appetising salad, beautiful and delicious. When thirty days up tie with raffia and blanch the heart. Do this when dry—very susceptible to rot.
Endive	Mar. indoors	Apr. to Sept.	$\frac{1}{4}$	th or tr 12 x 12	45	45	Hardy perennial. Leaves used in salads and sauces. Sickish sweet flavour, beautiful foliage. Seed used for flavouring.
Fennel		Apr.	$\frac{1}{4}$	th or tr 8 x 18		20 to frost	Used for flavouring; very strong.
Garlic		Apr.	R. 1	6 x 12		Summer	Roots grated and covered with vinegar, or cooked in various ways. Best in rich, moist soil. Will grow anywhere.
Horseradish		Sept. to May	R. 2 to 4	18 x 24		Early spring	Do not sow in September where winters are very severe. Old plants remain out all winter, freezing not injuring. Young leaves may be gathered from time to time or whole plant used at once. Heavy feeder.
Kale		Sept. to May	$\frac{1}{2}$	tr 12 x 18		150	Form of cabbage partaking of turnip's peculiarities. A large fleshy stem just above ground boiled and eaten like turnips. Cultivate like cabbage; better not transplanted.
Kohlrabi		May or June	$\frac{1}{2}$	th 6 x 18		115	

Lavender	Apr. or May	S. $\frac{1}{2}$ R. as deep as before	th 8 x 18 12 x 18		Before flowers fade	Used more as perfume than as flavouring. Flowers should be dried quickly in shade. Perennial. Cover in winter with six inches of litter.
Leeks	Sept.	1	tr 5 x 12		110	Thin when four inches high to one and one-half inches; transplant when eight inches high to five inches. Transplant into trench with several inches of old manure. Set plants deep as possible without covering crown and below the surrounding surface. Fill in trench as plants grow, to blanch stalks.
Lettuce	Feb. or Mar. indoors	$\frac{1}{4}$	8 x 12 th or tr 12 x 24	21 to 65	21 to 65	Two distinct types; cabbage, close heading; cos, open and tall. Finely powdered rich soil necessary. Apply hen manure, or nitrate of soda when seedlings are several inches high.
Marjoram, sweet	Apr. or May	$\frac{1}{4}$	tr 12 x 12		30 to 120	Perennial, grown as annual. Leaves and tips of shoots used for seasoning.
Martynia	Apr. or May indoors	1	tr 36 x 36		65	Will not germinate until ground is warm. Seed pods used for pickling in the same manner as cucumbers. Plant in hills or seed beds.
Mint, spear	Apr. or May	R. as deep as before	6 x 6		21	Delightful, refreshing herb, much used as a sauce to accompany lamb and mutton. Needs no protection over winter. Set roots as deep as before.
Mushrooms	Aug. outdoors	Spawn 2	9 x 12	35	35	Must be grown in hot manure in the dark. Whole plant is eaten. Beds yield five months or more.
Muskmelon	Apr. indoors	1	th 60 x 60	125	125	Give plenty of well-rotted manure in hills when planting. Nitrate of soda in frequent minute quantities.
Mustard	Nov.	$\frac{1}{4}$	Sow thick use thinnings		20	Sow in drills, or broadcast in a bed. Rake the bed or roll it so seed may be partly covered at least. Used in salads or boiled like spinach.
Okra	May indoors	1 $\frac{1}{2}$	th or tr 12 x 18	100	100	Young seed pods stewed, also used in gumbo soup. Extra early crop by sowing in pots or cans in March or April in the house or coldframe. Plant seeds four inches apart at first.
Onion	Aug.	S. $\frac{1}{4}$ R. 2	th or tr 6 x 18	100 to 100	100 to 100	May be raised from spring or fall sown seeds or sets. Chicken manure or nitrate of soda may be used.

Planting Table for Vegetables—Continued

NAME OF VEGETABLE	WHEN TO PLANT		DEPTH TO PLANT (inches) S—Seeds R—Roots	DISTANCE APART (inches) th=thin tr=transplant	READY TO EAT (Figures mean days)		ITEMS OF INTEREST
	Early Crop	Main Crop			Early Crop	Main Crop	
Orach		Apr. or May	$\frac{1}{2}$	Sow thick use thinnings		50	Used like spinach. Thin when six inches high and use thinnings. Coarser and ranker in flavour than spinach. Grows very tall when going to seed.
Parsley	Sept.	Apr.	$\frac{1}{2}$	th 6 x 12	Early spring	45	Protect September-sown seed with leaves and branches over winter. Leaves used as garnish and for flavouring. Soak seeds over night in warm water.
Parsley, turnip-rooted	Sept.	Apr.	$\frac{1}{4}$	th 5 x 12	Early spring	120	Large turnip-like root with parsley flavour. Delightful addition to soups and stews. May be stored with carrots for winter. If sown in September may be wintered over with a covering of hay or straw.
Parsnip		Apr.	$\frac{1}{2}$	th 6 x 18		140	Seeds do not need very rich soil; should be dug fine and deep. Roots may be left over winter or dug just before ground freezes and stored in sand (to exclude air) in a cool room or cellar.
Peanut	Mar. indoors	Apr.	$1\frac{1}{2}$	4 x 18	Before frost	Before frost	Do not use manure in soil. Peanuts need lime, phosphoric acid and light sandy soil. The stems of the blossoms elongate, go into the ground and ripen the pods there.
Peas	Apr.	May or June	3	thick rows 24	36 to 80	36 to 80	Plant early kinds in double rows six to nine inches apart. Brush or wire make good supports. Use only very well rotted manure. Moisture very necessary. Plant in trench six inches deep, cover three inches and fill in as plants grow.
Peppers		Mar. indoors	$\frac{1}{4}$	tr 18 x 24		140 to 150	Sweepings from a hen-house, or guano, the best fertiliser for peppers. Mix thoroughly with soil and apply again on top after plants have been set out three weeks.
Petsai and Pak-choi		Apr. or May	$\frac{1}{2}$	tr 12 x 18		40	Sometimes called Chinese cabbage; used as salad in all ways lettuce is used. Extremely good, crisp and tender. Pak-choi has a taller leaf and the midrib is used like chards and asparagus.

Potato	Apr. indoors	May or June	2 early 5 late	12 x 24 18 x 36	90	100 to 130	May be planted whole or cut to one, two or three eyes. Extra early crops may be secured by sprouting eyes in a warm, light room, or starting in a coldframe. Spray vines as soon as they appear, with Bordeaux and Paris green.
Pumpkin		May or June	1 $\frac{1}{2}$	th 108 x 108		120	Be sure to plant as far away from melons and squashes as possible, as they will cross-fertilise. Make the hills very rich before sowing seed.
Purslane		Apr. or May	$\frac{1}{4}$	th 4 x 12		90	Used by the French as a boiled green. Grows upright, unlike the common weed of our gardens.
Radish	Feb. or Mar. indoors	Apr. to Sept.	$\frac{1}{2}$	th 2 x 8	20	30 to 45	Sow in seedboxes or hotbed for early crop and every ten days for succession. The same in the garden later. Sow winter radishes in fall. Don't use fresh manure. Growth must be rapid and soil loose and fine.
Rampion		May	Scatter	th 3 x 8		Oct.	A poor sort of radish. Press the seed into the soil. About the smallest seed known. May be stored for winter use.
Rhubarb		Sept. or Oct.	R 4	36 x 48		May to July	Set roots into very rich soil. Cover in winter with one foot of manure. Chicken-house sweepings particularly good. Dig under in spring. Break the stems, do not cut them.
Roquette		Apr. or May	$\frac{1}{4}$	th 6 x 12		40	Almost horrible odour as well as flavour. Copious watering modifies the strong taste. Flower white, not particularly striking.
Sage		May to Sept.	R. as deep as before	12 x 18		June to frost	Set crown of plant just above surface. A flavouring herb. To dry, cut off branches, tie in bunches and hang in sun or warm room; powder and bottle immediately. Use the green leaves all summer. Ready to dry in September.
Salsify		Apr.	$\frac{1}{4}$	th 4 x 18		Oct. through winter	Roots very long and straight. Sometimes called Oyster Plant. May be dug and stored for the winter like carrots, or left in the ground.
Scolymus		Apr.	$\frac{1}{2}$	th 6 x 18		170	Belongs to the thistle family. Leaves very prickly, variegated. Roots used like salsify.
Scorzonera		Apr.	$\frac{1}{2}$	th 4 x 18		190	A delicate salsify; earth should be deeply dug and finely powdered, for the roots are long and straight.
Spinach	Sept.	Mar. to May	1	sow thick use thinnings	Early spring	30	Protect slightly over winter. Will give two or three pickings. Sow often—say ten days—for succession.

Planting Table for Vegetables—*Concluded*

NAME OF VEGETABLE	WHEN TO PLANT		DEPTH TO PLANT (Inches) S=Seeds R=Roots	DISTANCE APART (Inches) th=thin tr=transplant	READY TO EAT (Figures mean days)		ITEMS OF INTEREST
	Early Crop	Main Crop			Early Crop	Main Crop	
Spinach, New Zealand		May	1	sow thick use thinnings		40	Not a true spinach, but a very good substitute, growing well through the hot, dry weather; an excellent midsummer green. Soak seed in warm water over night before planting.
Squash	Mar. indoors	May or June	1	th 48 x 72	60	125	Use plenty of manure, well rotted, and give ample space. Can be planted between rows of late corn, or in hills among other early and main crops, for vines to occupy ground later.
Sweet Potato	Mar. indoors	Apr. cold-frame	R. 3	tr 18 x 24		120 to 150	A light, warm soil, long season and good seed. Whole potato must be sprouted under glass; sprouts cut off and transplanted.
Tarragon		Apr. or May	R. 'as deep as before	12 x 12		30 to 120	Young leaves a good addition to salads; may be dried and used as seasoning. Set plants same depth. Green leaves used in making tarragon vinegar.
Tomato	Feb. or Mar. indoors	Apr. seedbed	$\frac{1}{2}$	tr 36 x 36	100	150	Have garden ground very rich and mellow. Do not keep seedlings too warm; they should be stocky and not too tall. Start in hotbed, seedbox, pots or cans.
Turnip	Apr.	June to Aug.	$\frac{1}{2}$	th 4 x 18	60	70	Round or flat; white. May be stored over winter like carrots. Much more delicate than rutabaga.
Udo		Mar. to Apr.	Broadcast rake or roll after sowing	10 x 24 tr following spring		Second year Nov. and Dec.	When leaves turn brown in the fall, cut off and pile two feet of earth over the roots. In about forty days the shoots will appear and be ready to cut. Used like celery. The forcing variety can be blanched in a coldframe during the winter.
Watermelon		May	1	th 96 x 96		100	Place plenty of well-rotted manure in the hills before sowing, or plant around a sunken half barrel. Pinch off ends of vines after fruit has set. Plant seeds edgewise, eyes down, ten in a hill.

POSTSCRIPT



THIS is the end of my Vegetable Story. Some of these friends whose brief life history I have written are good, some bad and some indifferent. Making their acquaintance has been charming to us; and to those of you who have this pleasure in anticipation our experience may prove helpful. We do not pose as professional market gardeners nor as experts; our adventures have merely been those of the average garden lover.

There are several marked advantages to be gained from possessing, planting and caring for a garden of one's own. First and foremost is the intimate acquaintance with Mother Nature, which must ever be ennobling, uplifting and broadening; secondly, a freshness and a quality in one's food that is utterly unobtainable through any other source of supply; thirdly, a gain in health, if that be needed; and, last, but not least, the development of ingenuity, good sense and patience.

INDEX

INDEX

- AGARIC mushroom, 308
 Agricultural experiment stations, 32, 35, 145
 Alkalies, 6
 American Flag leeks, 206
 Ammonia, 5, 60
 sulphate of, 61, 146
 Annuals, 13, 150, 205, 207, 208, 225, 235
 Anthracnose, or bean rust, 79
 Aphids, or plant lice, 76
 Arlington dandelion, 194, 195 (illustration)
 Arnot strawberry, 316
 Arsenical poison for insects, 185
 Artichoke, 218
 globe, 213, 215, 216, 217, 308
 illustrations, 216, 217
 Jerusalem, 249, 250 (illustration)
 Asparagus, 155, 161, 172, 173, 191, 217, 220, 276
 bed, 105, 177
 cooking, 181, 182
 culture of, 176
 enemies of, 112, 183
 fall treatment of, 113, 182 (illustration)
 history of, 183
 medicinal properties of, 133
 varieties of, 130, 178
Barbe de Capucin chicory, 160
 Basil, sweet, 207
 Bay leaves, 233, 290
 Beans, 4, 12, 13, 17, 19, 38, 50, 52, 97, 284
 bush, 130
 canning, 275
 diseases of, 275
 green snap, 272
 illustrations, 98, 123, 274
 lima, 14, 87, 90, 98, 103 (illustration), 112, 273, 275 (illustration), 276, 283, 293
 poles, 80, 130
 rust on, 79
 salad, 275
 soy, 15
 string, 259, 270
 supports for, 87, 88, 90
 varieties of, 273
 Beetle, asparagus, 183
 Colorado, 72, 80
 black flea, 71, 140, 152, 154, 185, 214, 225, 246, 284, 290, 301, 302
 May, or June bugs, 79
 striped, 72, 284, 290
 twelve-spotted, 183, 184
 Beets, 4, 12, 13, 14, 17, 51, 97, 161, 226, 227, 240
 Brazilian, or Dracena-leaved, 28, 199 (illustration)
 Beets, cooking, 198, 228
 diseases of, 80
 maturing of, 98
 ornamental, 199
 pickling, 228
 storage of, 115
 tops of, 112
 varieties of, 130, 199
 Biennials, 189, 199, 211, 212, 225, 226, 235
 Bitters, 161, 196
 Blackberries, 18, 317, 318, 319
 diseases of, 320
 varieties of, 130
 Blackberry bushes, 112, 319 (illustration)
 jam, 321
 mush, 321
 Blackcaps, illustration, 317
 Black-rot on cabbage, 185
 Blanching cardoon, 174
 celeriac, 241
 celery, 164, 165, 166
 chards, 217
 chicory, 160, 161
 dandelions, 194, 195
 endive, 154
 kale, 191, 192
 leaves, 160
 udo, 173
 Blight on berries, 318, 319 (illustration)
 on celeriac, 241
 on celery, 169
 on plants, 71, 80, 253
 potato, 246
 Bone-meal, as fertiliser, 6, 7, 8, 17, 33, 38, 60, 61, 62, 113, 123, 146, 164, 173, 175, 178, 230, 247, 251, 265, 271, 299, 313, 314, 319, 320
 Borage, 28, 161, 173, 202
 illustrations, 127, 203
 Bordeaux mixture for insects, 72 (illustration), 75, 79, 80, 82, 83, 149, 169, 183, 185, 191, 214, 246, 253, 266, 275, 284, 299, 301, 318, 320, 321, 324
 Borers, how to destroy, 81
 Boston Market lettuce, 145
 marrow squash, 296
 Brandywine strawberry, 316
 Broad-leaved Batavian endive, 154
 dandelion, 194
 Broccoli, 14, 113, 134, 166, 213, 215 (illustration)
 winter protection for, 114
 Brussels sprouts, 75, 186, 189 (illustration)
 cooking, 190

- Bubach strawberry, 315, 316
 Burnet, 211, 212
 Butterfly, black, 76
 white, 75
- Cabbage, 13, 14, 15, 17, 39, 45, 46, 50, 53, 59, 88, 97, 104, 113, 155, 161, 170, 171, 184, 190, 213, 214, 215, 225, 239, 269, 305
 Chinese, 154
 cooking of, 143, 144, 188
 disease of, 132
 early, 184
 insect enemies of, 75, 76, 79, 81, 104, 185, 189, 191, 214
 late, 189
 lettuce, 144 (illustration)
 pickling, 186, 187
 seedlings, 68
 varieties of, 130, 185, 186 (illustration)
 winter protection for, 111, 114
 worm, 81, 185, 189, 191, 214
- Canning berries, 316, 321
 corn, 283
- Cantaloupes, 130, 300
- Carbon bisulphide for killing insects, 80, 81, 82, 185, 225, 231, 239, 253
- Carbohydrates, 239
- Caretan leek, 206 (illustration)
- Cardoon, 14, 28, 161, 166, 216
 culture of, 173, 174
 illustrations, 139, 174
 Spanish, 112, 173 (illustration)
 varieties of, 130
 winter protection for, 114
- Carolina Red sweet potato, 247
- Carrot, 13, 51, 56, 59, 97, 103, 161, 170, 225, 232, 234, 237, 239
 cooking of, 232
 illustrations, 233
 storage of, 115
 tops, 112
 varieties of, 130
 wild, 204
 winter protection for, 114
- Catalogues, seed, 24, 26, 28 (illustration), 33, 41, 50, 130, 136, 144, 145, 147, 173, 210, 222, 223, 304, 311, 315
 wheel-plow, 36
- Caterpillar, giant green, 266
- Catnip, 207
- Catsup, tomato, 269
- Cauliflower, 13, 53, 139, 171, 214, 307
 cooking, 215
 illustrations, 213, 214
- Cauliflower, insect enemies of, 75, 76, 79
 winter protection for, 111, 114
- Cayenne pepper, 305
- Celery, 14, 15, 17, 28, 39, 53, 59, 97, 102, 136, 176, 205, 217, 241, 242, 256, 263
 blanching, 165
 culture of, 161-164
 curled, 171
 diseases of, 80
 early, 162, 166
- Celery, illustrations, 113, 163, 164, 165, 166, 169
 insect enemies of, 76
 late, 163, 166
 lettuce, 147
 medicinal properties of, 133
 salad, 172
 seed, 46, 186, 233
 soup, 171
 storage of, 115, 167 (illustration), 170, 171
 varieties of, 130, 170
 winter protection for, 112, 113, 114
- Celeriac, 170, 221, 240, 241
 illustration, 169
- Charcoal for drainage, 65
- Chards, 139, 155, 199, 217
 cooking, 198
 illustration, 139
 Swiss, 28, 139 (illustration)
- Chervil, 28, 155, 204
 illustration, 133
 turnip-rooted, 240
- Chicory, 161
 varieties of, 130, 159
- Chillies, 304, 305
- Chinch-bug, how to kill the, 76
- Chinese eggplant, illustrations, 302, 303
- Chives, illustration, 206
- Citron melon, illustration, 297
- Citron, preserving, 301
- Club root, 185, 215
- Coldframes, 53, 67
 construction of, 39, 40 (illustration)
 cost of, 40
 for cauliflower, 213
 for celery, 163, 170
 for cucumbers, 284
 for eggplant, 301
 for kohlrabi, 239
 for lettuce, 145, 146
 for parsley, 204
 for radishes, 224
 for sweet potatoes, 248
 for tomatoes, 260
 for udo, 173
- Collards, 88, 113, 166
 cooking of, 143
 Georgia, 111, 188
- Compost heap, 17, 18, 61, 112, 113, 152, 306
- Connover's Colossal asparagus, 178, 179 (illustration)
- Cooking artichokes, 217, 250
 asparagus, 181, 182
 beets, 228
 Brussels sprouts, 190
 cabbage, 144
 carrots, 233
 chard, 198
 collards, 143
 corn, 280, 283
 eggplant, 303
 greens, 143
 kale, 190, 192
 mushrooms, 311

- Cooking mustard, 196
 okra, 290, 293
 onions, 253, 254
 parsnips, 231
 peas, 273
 potatoes, 249
 rhubarb, 176
 salsify, 235
 spinach, 144, 200
 squash, 296
 tomatoes, 250, 266, 268, 269
 vegetables, 143, 144, 259
 Cooper celery, 169 (illustration), 170
 Copper sulphate for plant diseases, 82
 Corrosive sublimate, use of, 80
Country Life in America, 24, 28 (illustration)
 Corn, 4, 12, 13, 14, 15, 36, 45, 50, 59, 88, 97,
 113, 293, 305, 306
 canning, 283
 cooking, 259, 280, 283
 drying, 284
 early, 51
 Egyptian, 277 (illustration), 279 (illustration)
 fertilisation of, 280
 Golden Bantam, illustration, 129
 illustrations, 50, 281, 283
 insect enemies of, 76
 planting of, 51, 276, 279
 pop, 283
 Shoe Peg, illustration, 280
 smut on, 79, 283
 varieties of, 120, 130
 White Cimitar, illustration, 129
 Corn-salad, 156, 203
 varieties of, 130
 winter protection for, 114
 Cos lettuce, 144, 145, 147, 154
 Cranberry pepper, 305
 Craniolaria, martynia, 288
 Creepers, how to kill, 75
 Cress, 28, 197
 American, illustration, 151
 extra-curved, illustrations, 151, 152
 pepper, 152
 Persian, 152
 varieties of, 130, 149
 Crimson cluster strawberry, 316
 Cucumber, 203, 284, 280, 321
 illustration, 285
 insects on, 72, 74
 pickling, 284-287
 varieties of, 130
 Cultivator, wheel, 36
 Currant blossom, illustration, 322
 jelly, 322, 323 (illustrations)
 Currants, 19, 321, 324
 varieties of, 130
 worm on, 324
 Cutworms, 64, 73, 76 (illustration)
 Daikon radish, 223
 Dandelion, 159, 193, 196, 202, 235
 cooking of, 144, 195
 illustration, 194
 Dandelion, medicinal properties of, 133
 varieties of, 130, 194
 winter protection for, 114
 Danvers carrot, 232 (illustration)
 Dewberries, 319, 321
 Diseases of plants, 13, 76, 82, 253
 Dibble, a garden tool, 38 (illustration), 39,
 53, 166, 205
 Dracena-leaved beet, 198 (illustration), 199
 Drainage for asparagus, 178
 Dock, 106
 French, 106
 large Belleville, 196
 Dunlap strawberry, 316
 Early Rose potato, 247
 Eggplant, 13, 259, 286, 301
 Chinese, 302, 303 (illustration)
 cooking, 302, 303
 seedlings of, 66
 varieties of, 130
 Endive, 13, 28, 88, 112, 136, 152, 154, 170
 Broad-leaved Batavian, illustration, 155
 celery and, 172
 green-curved, illustration, 153
 storage of, 115
 taking up, illustration, 157
 thinning of, 63
 varieties of, 130, 154
 white-curved, 154
 Enemies, plant, 266, 284
 Erfurt Giant celeriac, 241 (illustration)
 Eschscholtzias (California poppies), 123,
 124
 Excelsior strawberries, 316
 Express Cos lettuce, illustrations, 147
 Fall, work in the, 4 (illustration), 6, 7 (illustration), 111-116
 Fennel, 210
 illustrations, 134, 210
 dog, 211
 Florence, 209, 211
 Fern-leaved parsley, 204
 Fertilisers, 6, 7, 14, 15, 18, 24, 31, 32, 33, 34,
 60, 61, 62
 for artichokes, 217
 for asparagus, 178
 for beans, 275
 for lettuce, 145, 146
 for melons, 300
 for potatoes, 242, 245, 246, 247
 for radishes, 225
 for rhubarb, 112
 for tomatoes, 265
 Flat Dutch Head cabbage, 188
 Fly, the celery, 169
 Food, plant, 7, 34
 Formalin, solution of, 80, 246
 French dandelion, 194
 French moss-curved endive, illustration, 154
 Furrow, how to make a, 54 (illustrations)
 Gandy strawberry, 316
 Garden architecture, 23
 Garden, combination vegetable and flower, 11

- Garden, planning the, 8, 9 (illustration), 24, 26
 protection for, 8, 9
 radial, 13, 14, 28, 173, 203
- Garlic, 254, 269
 illustrations, 254, 255
- Garnishing, parsley for, 204
 plants for, 203
- Georgia Rattlesnake watermelon, 300
- Gherkins, pickling, 284
- Giant Iceberg lettuce, illustration, 148
- Ginseng, 311
- Glen Mary strawberry, 316
- Gold Coin potato, 247
- Golden Queen raspberry, 317
- Gooseberries, 18, 19, 321, 323, 324
 insect enemies of, 14
 varieties of, 130
- Green Mountain potato, 247
- Greens, 134, 191, 200, 227
 boiled, 140, 161, 189, 190, 192, 193, 195, 198
 cooking of, 143
 storage of, 115
- Hamburg parsley, 240
- Haverland strawberry, 315
- Hellebore, how to use, 81 (illustration)
- Herbs for flavouring, 207, 211
- Hibiscus, Japanese, 293
- Hoe, wheel, 35 (illustration), 55
- Hollandaise sauce, 171, 173, 182, 190, 218, 239, 241
- Horseradish, 228, 255, 256 (illustration), 285, 286
- Hotbed, 53, 67, 217
 for asparagus, 177
 for cabbage, 184
 how to make a, 40-41
- Hubbard squash, 206
- Humus, 4, 7, 8, 61, 246, 247, 274, 299, 306
- Insect enemies of vegetables, 13, 71, 74, 81, 185, 204, 214, 299
 friends, 183
- Irrigation, systems of, 104, 106, 271
- Jersey sweet potato, 247
- Jersey Wakefield cabbage, 188
- Jerusalem artichoke, 249
- Kale, 13, 14, 188, 198, 204, 233
 biennial, 191
 cooking of, 190, 192
 illustrations, 132, 191, 192
 insect enemies of, 75
 sauce for, 193
 sea, 191 (illustration)
 Siberian, 190, 192
 Stag-horn Fern, 190
 varieties of, 130
 winter protection for, 114
- Kan udo, 172
- Kerosene, as insect destroyer, 72, 79, 83, 266, 310
 emulsion, how to make, 82
 to kill insects, 73 (illustration), 76
- Kohlrabi, 239
- Lamb's lettuce, 156
- Large-rooted chicory, 159
- Lavender, 207
- Leaves we eat, 143 (illustration), 144
- Leeks, 14, 51, 97, 103, 130, 205
 American Flag, illustration, 135
 varieties of, 130, 206
- Legumes, 17
- Lentils, 273, 274 (illustration)
- Lettuce, 4, 12, 13, 15, 17, 33, 51, 61, 112, 136, 149, 152, 154, 155, 182, 184, 197, 209, 210, 224, 250, 273
 asparagus and, 182
 cabbage (illustration), 144
 cardoon and, 173
 celery and, 172
 early, 67, 145
 enemies of, 71
 fertilisers for, 146
 illustrations, 102, 149
 late, 88
 medicinal properties of, 133
 salad of, 144, 151
 shade-frame for, 93
 soup, recipe for, 148
 substitutes for, 153, 159
 summer, 97, 98
 varieties of, 130, 144, 145, 147
- Lime, 4, 7, 8, 17, 60, 62, 72, 82, 196, 225, 306
 air-slaked, 149, 184, 214
 resin mixture, 185
- Loopers on cabbage, 185
- Mace, 285
- Mallow family, 293
- Mammoth strawberry, 316
- Mangelwurzel, 199 (illustration), 228
- Manure, 4, 15, 33, 34, 38, 60, 61, 62, 114, 115, 225, 300
 drainage under, 41
 for asparagus, 177, 178, 181
 for beans, 275
 for blackberries, 319, 320
 for cabbage, 185
 for celery, 164
 for chicory, 160
 for hotbed, 40
 for kale, 192
 for leeks, 205
 for lettuce, 145, 146
 for melons, 299
 for mushrooms, 309, 310
 for onions, 251
 for parsley, 204
 for peas, 271
 for potatoes, 242, 245, 247, 248
 for rhubarb, 175
 for strawberries, 313
 for tomatoes, 263, 265
 for udo, 172
 liquid, 101, 101 (illustration), 102, 104 (illustration), 108, 181, 202, 300
 pit for, 5-6 (illustrations), 112
 poultry, 61, 112, 113, 164, 175, 185, 200, 239, 241, 251, 265, 271, 299

- Manure, storing and protecting, 6
 straw in the, 7
 winter coat of, 112
- Marblehead squash, 296
- Marie Sample strawberry, 315
- Marjoram, sweet 208
- Marker, wooden, for seeds, 41, 42 (illustration)
- Marshall strawberry, 316
- Martynia proboscidea, illustration, 287
- Martynias, illustrations, 123, 288
 pickling, 289, 290
 varieties of, 288
- Mayonnaise dressing, 147, 153, 155, 197, 198
- Melon, 51, 52, 97, 101, 284, 300, 321
 barrel (illustration), 299
 beds, 299
 citron, illustration, 297
 insects on, 72, 74
 Netted Gem, illustration, 297
 varieties of, 130, 296, 300
 vines, 112
- Midnight strawberry, 316
- Mildew, 271
 on beans, 275
 on cucumbers, 284
 on melons, 299
 on peas, 271
- Mint sauce, 208
- Moore's asparagus, 178
- Morgan strawberry, 316
- Morning-glory, 89, 248
- Moss-curled parsley, 204
- Moths, night-flying, 73 (illustration)
- Moyashi udo, 172
- Mulch, 214, 309
 for peas, 271
 for strawberries, 313, 314
 use of, 169
- Mushroom, 218, 307, 308, 310
 catsup, 311
 cooking, 311
 diseases of, 309
 illustrations, 261, 308
 varieties of wild, 308
- Muskmelon, 296
- Mustard, 196, 197, 269
 cooking, 196
 salad containing leaves of, 197
 seed, 285
 varieties of, 130
 wild, 198
- Mycelium, 308
- Nitrogen, 4, 6, 15, 16, 35, 60, 61, 62, 131, 132, 166, 239, 245, 247, 271, 274, 275, 305, 306
- New Zealand spinach, 136 (illustration), 199, 202
- Netted Gem melon, illustration, 297
- muskmelon, 300
- Nick Ohmer strawberry, 316
- Okra, 260, 266, 288, 290 (illustration)
 cooking of, 290, 293
 seed, illustration, 289
- Onions, 14, 51, 97, 103, 170, 206, 207, 221, 233, 251, 252, 254, 255, 269, 284, 293
 insect enemies of, 76
 juice, for flavouring, 148, 201, 272
 medicinal properties of, 133
 potato, 253
 red, 250 (illustration)
 varieties of, 130
 Welsh, winter protection for, 114
- Orach, 134, 193
- Oxalic acid, 196
- Oyster plant, 235
- Pak-choi, 154, 155
- Palmer strawberry, 316
- Palmetto asparagus, 178
- Paprika, 305
- Paris green, 73, 74, 75 (illustration), 149, 225, 324
 on asparagus, 183
 on cabbage, 185
 on kale, 191
- Parsley, 12, 14, 28, 52, 155, 170, 191, 203, 204 (illustration), 205
 Hamburg, winter protection for, 114
 insect enemies of, 76
 turnip-rooted, 240 (illustrations)
 varieties of, 130
- Parsnips, 13, 14, 51, 97, 103, 112, 170, 221, 225, 228, 232, 235, 239
 cooking, 231
 illustrations, 229, 231
 planting, 56
 varieties of, 130
 winter protection for, 114
- Patty-pan squash, 295 (illustration), 296
- Peanut, 305, 306, 307
 butter, 307
 meal, 307
- Peas, 4, 13, 14, 17, 19, 38, 113, 166, 250, 271, 273, 276, 284, 317
 cooking, 273
 cow, 15
 early, 51, 184, 265
 illustration, 90
 seed of, 46
 sugar, 136, 166, 270 (illustration) 272 (illustration)
 supports for, 89, 90
 "vaccinated," 17
 varieties of, 130, 270
 vines, 112
 White Cimitar sugar, 90
- Pepper corn, 290
- grass, 150, 151
- hash, recipe for, 187
- Peppermint, 207
- Peppers, 186, 260, 303, 304, 305
 illustration, 304
 seedlings of, 66
 varieties of, 130, 305
- Perennials, 14, 159, 161, 175, 176, 191, 195, 196, 208, 211, 248
- Pe-tsai, 123, 126 (illustration), 135, 136, 154, 155

- Pits, vegetable, 113 (illustrations), 115, 116
- Plant enemies, 71
- food, 32, 35, 62, 65, 175
- Planting, successional, 13
- Phosphoric acid, 4, 6, 35, 60, 61, 62, 245, 247, 271, 274, 306
- Piccalilli, 269
- Pickling artichokes, 250
- beets, 228
- cabbage, 186, 187
- citron, 301
- cucumbers, 284-287
- gherkins, 284
- martynias, 289, 290
- tomatoes, 263, 267, 269
- Plow, evolution of the, 31, 32
- horse, or hand, 35
- wheel, 54
- Plusia, cabbage, 75
- Poppies, 124
- seed of, 45
- Potash, 4, 35, 60, 61, 62, 245, 247, 271, 274, 306
- Potato, 17, 50, 60, 97, 103, 104, 170, 204, 207, 221, 228, 235, 238, 242, 245, 246, 247, 248, 249
- bug, 72, 246, 301
- enemies of, 79
- diseases of, 80
- illustrations, 104, 137, 242, 243
- planting, 242
- storage of, 114, 115
- sweet, 247, 248, 249, 251
- varieties of, 130
- Preserving strawberries, 316
- Prickly spinach, 199, 200 (illustration), 202
- Pride of Cumberland strawberry, 316
- Prince of Wales kale, 191
- Proboscidea, martynia, 288
- Puffball mushroom, 307 (illustration), 308, 310
- Pumpkin, 259, 295, 296, 302
- illustrations, 293, 294
- varieties of, 130
- Purslane, 193
- Pyrethrum powder, for insects, 75
- Radial garden, 173, 203
- Radish, 4, 12, 13, 33, 51, 61, 155, 184, 224, 232, 284, 299
- enemies of, 71
- how to prepare for table, 225
- illustrations, 222, 223
- Japanese, 123
- planting of, 56
- seed of, 46, 155, 177, 178, 228
- Sakurajima, 14, 28, 124 (illustration), 134, 221
- varieties of, 130
- Raffia for cardoon, 174
- for celery, 166
- for endives, 153
- illustrations, 89
- Raffia for lettuce, 98
- for peppers, 305
- for tomatoes, 93, 266
- use of, 88, 214
- Rampion, 225, 226 (illustration)
- Raspberries, 18, 317, 318, 319
- varieties of, 130
- Raspberry boxes, use of, 66
- vinegar, 318
- Resin and lime, 185
- Resin-lime wash, recipe for, 82
- Rhubarb, 14, 61, 161, 182, 205
- cooking, 176
- culture of, 175 (illustration)
- fall treatment of, 113
- fertiliser for, 112
- varieties of, 130
- Rocky Ford muskmelon, 300
- Romaine lettuce, 147
- Root cellar, 117, 119 (illustration), 152, 160, 161, 170, 195, 224, 225, 233, 234, 239, 248, 252
- ideal, 118
- location of, 116
- Root house, a modern, 115
- Root-maggot, 225, 231, 239, 253
- how to kill, 81
- Root-rot, on asparagus, 183
- Roots, artichoke, 249
- beet, 227
- carrot, 232
- parsnip, 231
- rampion, 226
- salsify, 235
- turnip, 238
- we eat, 221 (illustration)
- Roquette, 212 (illustration), 213
- Rorer, Mrs., quoted, 173, 182, 200
- Rot, black, 152
- potato, 246
- on tomatoes, 266
- Rows, for asparagus, 177, 178
- for beans, 274
- for blackberries, 319
- for celery, 164, 166
- for currants and gooseberries, 321
- for endive, 152
- for mushrooms, 309
- for peas, 271
- for potatoes, 242
- for radishes, 224
- for salsify, 234
- for strawberries, 314, 315
- for tomatoes, 263
- how to run the, 8, 14, 26, 36, 37, 38, 53, 54
- Rural New York potato, 247
- Rust on asparagus, 183
- on beans, 79, 98, 275
- on beet leaves, 227, 228
- on berries, 318
- on celery, 169
- on plants, 71
- Rutabagas, or Swedish turnips, 237, 238 (illustration), 239

- Sage, 207, 208 (illustrations), 209
 Savory, summer, 208
 winter, 208
 Sakurajima Mammoth radish, 124 (illustration), 136, 221, 223 (illustration), 224, 225, 241
 Salad, 209, 210, 211, 212, 213
 bean, 275
 cabbage, 186
 cardoon, 173
 cauliflower, 215
 celery in, 172, 173
 chicory in, 160, 161
 cress in, 151
 dandelion, 194
 endive in, 152, 153
 flavouring for, 209
 "four-leaved clover," 197
 leaves for, 143
 lettuce, 146, 148
 onions in, 253
 pe-tsai, 155
 potato, 247
 vegetables for, 144
 water cress, 150
 winter, 160, 172
 Salsify, or oyster plant, 51, 97, 103, 130, 170, 221, 234 (illustration), 237
 Sandwich Island salsify, 235
 Saurkraut, recipe for making, 187
 Savoy cabbage, 185, 188
 Scab on plants, 71, 80, 227
 potato, 227, 245, 246
 Scolymus, 134, 234, 237
 illustrations, 236
 Scorzonera, 14, 28, 52, 134, 136, 221, 234, 237, 241
 illustrations, 234, 235
 Seed, 87, 89, 134
 asparagus, 177, 178
 bean, 49 (illustration), 275
 beet, 198, 226, 227
 borage, 203
 box (illustration)
 broccoli, 215
 Brussels sprouts, 189
 burnet, 211
 cabbage, 184
 cardoon, 173
 carrot, 232
 cauliflower, 214
 celery, 161, 162, 169, 171, 186
 chicory, 160
 corn, 49 (illustration), 276, 279
 corn-salad, 156, 159
 cress, 151, 152
 cucumber, 287
 dandelion, 195
 endive, 154
 eggplant, 302
 firming the earth over, 55
 Georgia collard, 188
 Hamburg parsley, 240
 herb, 208
 insects in, 82
 Seed, illustrations, 49, 50, 53, 259
 kale, 49 (illustration), 191
 kohlrabi, 239
 leeks, 205, 206
 left-over, 49
 lettuce, 144, 145, 149
 method of germination, 52
 martynia, 49 (illustration), 288 (illustration), 289
 melon, 300
 mushroom, 308
 mustard, 197, 285
 okra, 290
 onion, 251
 orach, 193
 parsley, 53 (illustration), 204
 parsnip, 228
 peanut, 306
 peas, 270, 271, 272
 pepper, 304
 pe-tsai, 155
 planting of, 7, 26, 41, 53, 54, 55 (illustration), 65
 preparing bed for, 37
 pods we eat, 259
 prickly spinach, 201
 radish, 222, 224, 299
 rampion, 225
 rhubarb, 175
 rocket, 212
 sage, 207
 salsify, 234
 scolymus, 236
 selection of, 46, 50, 51
 spinach, 200, 202
 squash, 49 (illustration), 295
 sunflower and poppy, 45, 46 (illustrations)
 tomato, 260, 263, 264, 266
 turnip, 238
 "vaccinating" the, 16
 water cress, 150
 watering of, 56
 Seedlings, 37, 59, 65
 beet, 227
 borage, 203
 cabbage, 184
 cauliflower, 213
 celery, 162 (illustration), 163
 chard, 198
 chervil, 205
 corn, illustration, 279
 corn-salad, 156
 cress, 149, 152
 eggplant, 301, 302
 French dandelion, illustration, 195
 Georgia collard, illustration, 188
 endive, 153 (illustration)
 enemies of, 71
 kohlrabi, 239
 Hamburg parsley, 240
 lettuce, 145, 146, 147 (illustration)
 lettuce-leaf corn-salad, illustration, 159
 mustard, 197
 newly set out, 61
 okra, 289 (illustration), 293

- Seedlings, onion, 251 (illustration), 253
 orach, white (illustration), 193
 parsley, 170, 240 (illustration)
 pea, 271
 pe-tsai, 155
 radish, 224
 rampion, 226
 receptacles for starting, 63, 65 (illustrations), 66, 67 (illustration)
 rhubarb, 175
 salsify, 234
 scolymus, 236
 spinach, 201, 202
 spindling, 68
 sugar pea, illustration, 272
 udo, 172
 sweet potato, 248
 thinning of, 62
 tomato, 264, 265
 transplanting of, 38, 53, 64 (illustration), 66 (illustration), 67, 68 (illustration)
 turnip, 238
 vegetable marrow (illustration), 294
 water cress, 150
 white orach, illustration, 193
- Shallots, 251, 255
 illustrations, 252, 253
- Sharpless strawberry, 316
- Simpson lettuce, 98, 131 (illustration), 145
- Slaw, cold, 186
 saurkraut, 187
- Smut, on corn, 103, 280, 283 (illustration)
 on onions, 253
- Soda, nitrate, of, 15, 33, 61, 98, 146, 155, 200, 224, 225, 252, 265
- Soil, use of, 17, 18, 34, 39
- Soil, 17, 37
 conserving moisture in, 55
 fertilisation of, 14, 35
 firming the, 38
 for cress, 152
 how to improve the, 34
 how to loosen the, 7
 inoculating the, 16
 preparation of, 3, 4
- Soot as a fertiliser, 62, 164
- Sorrel, 106
- Soup, celery, 172, 173
 cream of asparagus, 182
 gumbo, 290
 lentil, 273
 lettuce, 148, 182
 making, 276
 okra, 293
 pea, 272
 spinach, 182
 vegetable, 240
- Spawn, mushroom, 308, 309, 310, 311
- Spearmint, 208, 209 (illustration)
- Spinach, 13, 182, 192, 193, 201 (illustration)
 cooking of, 144, 200
 dock, 196
 New Zealand, 136, 140 (illustration), 202
 rickly, 202
- Spinach, sauce for, 201
 soup, 182
 winter, illustration, 202
 winter protection for, 114
 varieties of, 130, 199
- Sprayer, for celery, 162
 for tomatoes, 264
 knapsack, 77 (illustration), 80 (illustration), 246
- Spraying, 82
 appliances for, 79, 80 (illustration)
 beans, 275
 blackberries, 320
 corn, 284
 eggplant, 301
 potato vines, 246
 tomatoes, 266
- Spring work in the garden, 3, 7, 31, 51, 177, 178, 195, 217, 232
- Squash, 51, 52, 97, 101, 259
 bug, how to kill the, 72
 illustrations, 293, 295
 insect enemies of, 74
 patty-pan, 295
 summer, 296
 varieties of, 130, 295, 296
 vegetable marrow, 102 (illustration), 291 (illustration), 296
 vine borer, 74
 winter, 296
- Stag-horn Fern kale, 190 (illustration), 191
- Storage of vegetables in winter, 115-119
- Strawberries, 19, 273, 311, 317, 320, 321
 illustration, 312
 varieties of, 130, 315, 316
- Strawberry bed, 313 (illustration)
 boxes, a use for, 66
 jam, 316
 vines, 112
- Sublimate, corrosive, 246
- Succotash, 89
- Sunflower, 47 (illustration), 250
 Italian, 249
 Russian, 45
- Supports for plants, 87-94
- Tabasco oil, 305
 sauce, 172
- Tamales, Mexican, 305
- Taragon, 208
 vinegar, 209
- Tassel-worm, how to kill the, 76
- Thinning asparagus, 177
 beets, 227
 burnet, 211
 chard, 198
 corn, 279
 corn-salad, 156
 dandelions, 195
 Hamburg parsley, 240
 lettuce, 146, 197
 martynias, 288
 melons, 299
 okra, 293
 onions, 252

- Thinning parsley, 204
 parsnips, 228
 peas, 271
 peppers, 304
 radishes, 222, 224
 rampion, 225, 226
 roquette, 212
 salsify, 234
 scolymus, 236
 seedlings, 62
 spinach, 200, 201
 turnip, 238
 tomato, 264
- Thorburn Giant celeriac, 241
- Tobacco, as insect destroyer, 72 (illustration), 76, 214
- Tomato, 4, 12, 13, 17, 19, 38, 39, 50, 51, 53, 62, 80, 97, 101, 112, 171, 197, 210, 260, 263, 273, 279, 283, 284, 293, 296, 304
 cardoon and, 173
 cooking, 259, 266, 268, 269
 early, 265
 for salad, 151, 153
 illustrations, 263, 264, 265
 pickling, 267, 269
 preserved, 267
 rot, 266
 seedlings of, 66, 68
 strawberry, 266
 supports for, 90, 91, 93, 94 (illustration)
 transplanting, 64
 varieties of, 130, 260
- Tonic plants, 160, 175, 176, 182, 196, 242
- Tools, garden, 23 (illustration), 31, 32, 36, 37, 38, 41 (illustration)
- Transplanting, 38, 39 (illustration), 41, 60
 artichokes, 217
 asparagus, 178
 beets, 227
 borage, 203
 broccoli, 215
 cabbage, 185
 cardoon, 173
 cauliflower, 213, 214
 celery, 162, 163, 164, 171
 celeriac, 241
 chard, 198
 devices for, 63
 endives, 153
 illustration, 35
 kale, 191
 kohlrabi, 239
 leeks, 205
 lettuce, 145
 martynia, 288
 methods of, 53
 okras, 293
 onions, 253
- Transplanting peppers, 304
 pe-tsai, 155
 tomatoes, 64, 264, 265
 radish, 222, 224
 rhubarb, 175
 sweet potato, 248
- Trench, cabbage, 186
- Turnip, 173
 celery, 164 (illustration), 166 (illustration), 170
 leek, 205
 parsnip, 231
- Trianon lettuce, illustrations, 130, 146, 147
- Turions, 178
- Turnip, 225, 237, 238 (illustrations), 239
 insect enemies of, 76
 Swedish, 238
 varieties of, 130
 winter storage of, 115
- Udo, varieties of, 172
- Vauregard winter onions, 253
- Vegetable marrow squash, 295, 296
- Vegetables, chemical ingredients of, 132
 cooking of, 143, 144, 259
 early, 27, 51
 diet of, 131
 fertilisers for, 61
 flower bed, 28, 199
 home-grown versus "grocery," 135
 illustrations, 27
 insect enemies of, 74
 medicinal properties of, 133
 pits for, 113 (illustrations), 116, 117 (illustration)
 transplanting, 67
 versus flowers, 123
 winter storage of, 115-119
- Ventilation for root cellar, 118-119
 for root house, 115
- Water cress, 149, 150 (illustrations), 151, 152
- Watermelon, 295, 296, 300
- Weeds, promoter of, 5
- Weevil, how to kill, 82
- Welsh onions, 253
- Wethersfield onion, 252
- Windbreak, 1 (illustration), 12, 28
 for tomatoes, 265
- Whale oil soap for insects, 74 (illustration)
- Wine berries, 18, 317
- Witloof chicory, 159, 160 (illustrations)
- Winter Queen celery, 160 (illustration), 170
- Wood-ashes as fertiliser, 6, 7, 8, 15 (illustration), 17, 33, 38, 60, 61, 62, 113, 164, 175, 239, 247, 251, 265, 271, 290, 313, 314, 319, 320
- Wood lice, 310

PROPERTY OF
 A. & E. COLLEGE

